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Early Man and the Soils of Anglesey

by W. F. GRIMES

IT is hardly necessary to remind readers of ANTIQUITY of the importance which environmental studies have assumed in archaeology. Since the pioneer work of Crawford and Williams-Freeman in 1912–15 we have become increasingly aware of environment. As a body we are (at least in theory) clay-land-and-damp-oakwood-conscious; we approach no problem of field archaeology without a hopeful eye on the geological map and our idea of its implications.

If sometimes we have held our beliefs in too simple faith, that in the beginning was an excusable fault. In the early days generalizations which saw things in their least complicated form were—and for that matter still are—valuable. Heavy clay-land=damp oakwood and marsh unsuited for settlement and therefore avoided; light soils=open land much sought after by early man. The jargon comes readily to us, and remains no less true, for those whose purpose is generalization, for the facility with which it is uttered.

But the great danger—to which I have myself ventured to draw attention in the past (1)—is that we may forget that this is in fact a generalization, suitable when a broad outline is required, but possibly misleading when applied in detail to limited areas. The generalization should indeed be regarded as marking the first stage in the environmental approach; and the purpose of this note is to suggest a possible way by which conclusions of a more detailed kind may be arrived at.

For illustration of this method the best approach is obviously through the detailed study of a limited area; and I have chosen Anglesey for three reasons. In the first place, the publication in 1937 of the Anglesey Report of the Royal Commission on Ancient Monuments for Wales presents us with the necessary archaeological distribution maps. Secondly, there was already in existence the extraordinarily detailed one-inch Drift Map of Anglesey prepared by Dr Edward Greenly. And thirdly, Messrs Hughes and Walters published in 1935 under the auspices of the Welsh Soil Survey (2) a soil-map of the island. I will indeed confess that I was attracted to this problem in this particular form by a feeling, on reading the Commission's report some time ago, that their treatment of environmental problems raised more questions than it answered;

[1] ANTIQUITY, IX (1935) 429–33.

[2] Hughes and Walters, *Soil Survey of Wales*, Progress Report, 1931–4, *Welsh Journal of Agriculture*, 1935, 188.

and it is therefore necessary to say something of the Commission's approach and of the results obtained.

The question turns on the boulder-clay with which a very large part of Anglesey—almost four-fifths of the whole island—is covered, as the map, FIG. 1, which is a simplified version of Dr Greenly's drift map, shows. The Commission have taken the course which I think would usually be taken by archaeologists in these matters. They have not actually given us a map, but they clearly assume that the Boulder Clay of the drift map is essentially a uniform deposit, and they equate it with damp oakwood as I have done at the beginning of this note.

I am not concerned here to discuss the detailed results that arise from this treatment. What I have done, on Map 1, is to present the Bronze Age and Iron Age distributions against this background of undifferentiated Boulder Clay.

The result when expressed in tabular form (3) is somewhat astonishing :

Period	Sites on Boulder Clay	Sites free from Boulder Clay	Doubtful	Totals
Neolithic	34 (56)	8 (8)	—	42 (64)
Bronze Age	38	24	6	68
Iron Age	50	16	6	72
Totals	122 (144)	48 (48)	12	182 (204)

With the three periods showing 87, 55 and 69 per cent respectively of their sites on Boulder Clay we are faced with the extraordinary fact that the early peoples of Anglesey apparently chose deliberately to settle on boulder clay-covered areas, thus contradicting in a most emphatic manner the generally accepted belief which I have outlined above.

Such a situation obviously calls for further examination, to discover what factors have placed Anglesey in this special situation. A question arises as to the extent to which the position of Anglesey as an island, with the resultant well known effect of sea-winds in restricting vegetation, may have nullified the effects of the Boulder Clay. But it is generally agreed that much of the present-day treelessness of Anglesey is due to deforestation ; and trees will certainly flourish there today whenever they are allowed to do so.

It seems unlikely, then, that non-geological factors are responsible. Turning to Dr Greenly's *Memoir* we at once get a hint of the true position. For the term Boulder Clay there as elsewhere is a pointer to the origin rather than to the actual constitution of the material (except in the broadest sense). The Memoir indicates that the Boulder Clay of Anglesey is not a uniform deposit of external origin swept by glacial action over the native rocks : it was produced *in situ* by the grinding down of those rocks, so that its composition and character vary accordingly.

[3] My totals are a modification of the Commission's in two respects. First I have separated megalithic chambered round cairns and normal Bronze Age barrows with cists, which on the Commission's maps are shown by the same symbol and title ; and secondly, I have distinguished between actually existing and reputed megalithic burial chambers, except where the evidence for the latter seems to be above reproach. Some of these reputed sites can now be recognized as natural, and it seems better therefore to treat the whole class with reserve ; but they are included in the bracketed totals in the table.

● BRONZE AGE BARROWS O BRONZE AGE CHANCE FINDS + IRON AGE SITES

MAP 1

It is therefore obvious that distributions plotted against the Boulder Clay of Anglesey will be misleading in any attempt to assess environmental factors in the early occupation of the island. The question now is, upon what basis can we hope to get reliable results ?

It is here, I suggest, that Messrs Hughes and Walters' soil-map comes into the picture as the only form of classification which summarises in sufficient detail the pedological characters of Anglesey by which vegetation would be affected and to a large extent controlled. Map II shows the distributions on a base which though simplified retains the essential features of the soil-map. For the full explanation of the nomenclature adopted by the Welsh Soil Survey reference must be made to the Survey's reports published in the *Journal of Welsh Agriculture ;* the classification adopted in my table is probably adequate for our present purpose.

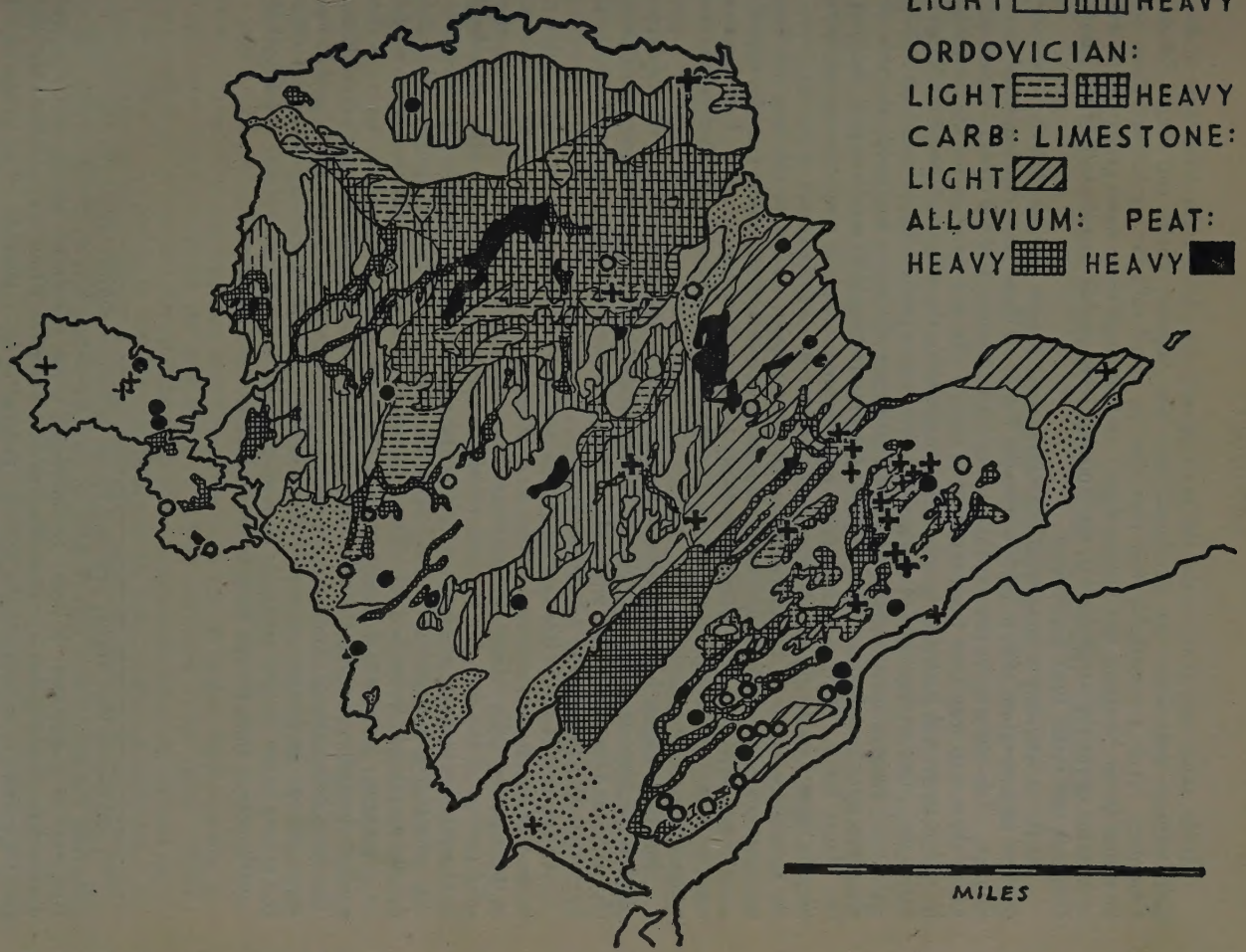
Before examining the results I should of course say that I would not claim that these figures are infallible, if only because of the small scale of the maps used. Obviously, the only completely scientific method would be the determination of soil-type on each individual site and the distributions should be plotted on much larger maps. My chief aim here is to illustrate the principle.

Period	I. Light or well-drained soils				II. Heavy soils, or soils with impeded drainage					Totals
	Mona Complex	Carboniferous Limestone	Ordovician	Other types	Mona Complex	Ordovician	Marine Alluvium	River Alluvium	Peat	
Neolithic ..	26	6	1	2	3	1	—	3	—	42
	(39)	(9)	(3)	(3)	(3)	(2)	(2)	(3)	(—)	(64)
Bronze Age ..	28	13	2	5	10	6	2	1	1	68
Iron Age ..	27	23	1	2	4	5	1	9	—	72
Totals	81	42	4	9	17	12	3	13	1	182
	(94)	(45)	(6)	(10)	(17)	(13)	(5)	(13)	(1)	(204)

It is of course a truism that figures may be turned to suit almost any argument. The fact remains that where so much is inferential an approximation to the truth is only to be obtained by the careful study of figures such as these. The chief point that I wish to urge is simply that this method gives us a more precise view of man's relationship to his environment in Anglesey by reason of the fact that (as I have already said) the pedological background is more detailed than the geological drift-map could be, and reflects more accurately than either the drift or the solid map could be expected to do the factors which govern environment for the human inhabitant.

There are, however, one or two points of detail on which I might comment.

The first is that, as the second part of the table shows, at no time were the heavier soils entirely neglected : the attack on them began in the Neolithic period, when 17 (16) per cent of sites were on such soils. In the Bronze Age this figure is increased to 28 per cent. There is a slight drop in the Iron Age to 26 per cent ; but it is this period which shows the first real intrusion into the alluvium : the river alluvium now accounts for almost half the sites on heavier soils at this time.


MONA COMPLEX:
LIGHT
HEAVY
ORDOVICIAN:
LIGHT
HEAVY
CARB: LIMESTONE:
LIGHT
ALLUVIUM:
HEAVY
PEAT:
HEAVY
MILES
● BURIAL CHAMBERS (EXISTING)
O BURIAL CHAMBERS (REPUTED)
+ CHANCE FINDS

MAP II

At the other end of the scale, the most densely populated areas were those of the light-medium soils which are developed from the Anglesey shales and schists (Mona Complex). It is a remarkable fact that sites on these soils far outnumber those on limestone in the Neolithic and Bronze Ages ; and although there was a greatly increased occupation of the limestone areas in the Iron Age, even at this time the soils of the Mona Complex just retain their superiority.

As far as Anglesey is concerned, therefore, these figures indicate that the influence of these light-medium soils in early settlement has at all times been dominant and continuous. I do not propose to carry this further with a discussion of the types of vegetation which these soils may have been expected to carry : that is a question for the botanists in which there will probably be need also to consider the effects of possible climatic variations. But on the basis of modern conditions it is permissible to point out that—quite apart from traditional beliefs about the presence of trees in Anglesey—the area of the island most heavily clothed with trees at the present time is its southern part, flanking the Menai Strait. This was one of the most densely occupied areas throughout prehistoric times : in the Neolithic phase particularly it was a great centre of activity ; and the conclusion seems to be unavoidable that these people, who were the first effective colonisers of Anglesey (for the Mesolithic settlers were few and confined to the coastal areas) must have been able to deal effectively with forest of some density, if it was not actually of the ' damp oakwood ' variety, thereby beginning here as elsewhere a process which has gone on ever since.

But these results have a significance which crosses the Menai Strait, for they emphasize the importance of that class of loam-terrains intermediate between the heavy clay-lands and the porous soils whose claims were first advanced in the pages of ANTIQUITY by Messrs Wooldridge and Linton in 1933.

In any case, I would like to suggest that Anglesey in this respect provides a pointer to the way which environmental studies on a distributional basis should follow elsewhere in this country. The significant factor on the geological side is neither the drift nor the solid geology of the area, but the soil, which, as I have indicated, is classified according to characters which are of direct environmental significance. It seems to me therefore that wherever soil-maps exist they provide the proper back-ground against which the distribution should be studied (4). The results to be obtained from this procedure might be important ; they would almost certainly be more precise than those based on the geological maps in areas like the Midlands where the surface deposits are much diversified. The chief difficulties of course are the uncertainties introduced by the small scale of the maps and the inexactness of record that too often prevails on the archaeological side. But as long as the dangers are borne in mind we ought to be able in this way to get further —with safety—than we can hope to do by present methods of study.

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[4] A soil-map of East Anglia, prepared by the School of Agriculture of the University of Cambridge was published in 1931 (Report 19, Farm Economics Branch, School of Agriculture, University of Cambridge); it would be interesting to see the already existing archaeological distributions plotted against it. I have tried to do this tentatively from the published maps, but gave the attempt up as impracticable with the material at my command. The archaeological distributions would need to be plotted anew on a soil-map of a much larger scale than is available in the published version.

The Settlements of the Celtic Saints in South Wales

by E. G. Bowen

A CONSIDERABLE literature has grown up in an attempt to interpret the *Lives* of the Celtic Saints. It is, however, concerned almost exclusively with hagiological, textual and literary problems and very little attempt has been made to appreciate the part played by these pioneers in determining the pattern of settlement and culture reflected in the earliest written accounts of native Welsh society.

If we accept the view held by most students of the Celtic church that ancient churches and chapels now bearing the names of Celtic Saints owe their foundation in the first instance to the fact that the saint in question, or one of his immediate followers, actually visited the site and established thereon a small religious community which became the forerunner of the modern church, then, by plotting on a map all the churches known to be, or to have been, dedicated to a particular saint, we possess at once a readily available means of studying both the extent of a saint's influence—the distribution of his cult—and, at the same time, the relationship of his churches to relief and to other elements in the physical and cultural environment. This approach has, in addition, the further advantage of allowing the investigator to be independent of the entirely unsatisfactory material preserved in the *Lives* of the various saints, the vast majority of which were written in the 12th century, several hundreds of years after the events they purport to describe, by Norman monks eager to re-orientate local legends to their own particular theological and ecclesiastical prejudices.

In its general application the method of approach to be employed in this paper has already yielded several suggestive results, as, for example, in drawing attention to the very close correlation that exists between the distribution of the cults of the various saints and the ancient cultural provinces of Atlantic Britain as delimited by archaeologists and pre-historians in recent years (1). In this paper it is proposed to develop further this method of approach with special reference to a more limited area comprising South Wales and its borders. This region played a very important part in the development and spread of Celtic Christianity in the post-Roman centuries.

In placing this emphasis on dedication-distribution it must not be forgotten that there is a possibility that a famous saint's cult was revived in the Middle Ages, and that the revival was accompanied by the dedication of further churches in his name. If this were proved to be the case the application of the dedication-distribution method as far as it applies to conditions in the Dark Ages would be open to serious criticism. An attempt has been made elsewhere (2) to show how unimportant such revivals are likely to have been from this point of view, yet it is clear that before any final decisions are reached based upon the application of this method, every dedication must be examined critically in the light of all the historical evidence concerning it. Such work undertaken

[1] E. G. Bowen, 'The Travels of the Celtic Saints', Antiquity, March 1944, p. 16 ff.
[2] ibid. p. 17.

in conjunction with historians and philologists is already in progress, but it will naturally take a very long time before any comprehensive statement can be published. In the meantime it has been considered worthwhile presenting the tentative conclusions embodied in this paper based as they are on the dedication evidence that is readily available, and accepting also the traditional view that all dedications (excepting the obviously modern ones) are, in the case of the Celtic Saints, closely associated with the initial foundation on the site in the Dark Ages.

It is already well established that South Wales shared to the full in the various cultural movements that affected the Highland zone of Britain in prehistoric times. Ever since the days of the megalith builders cultural movements emanating from the western Mediterranean spread along the Atlantic shores of Europe from Iberia to Caithness. At certain periods these movements were very marked, especially when conditions in central Europe and south-eastern Britain were disturbed, but when more peaceful conditions reigned, the Atlantic sea routes were replaced by routes utilizing south-eastern Britain and northern France.

The centuries preceding the Christian era marked a period of disturbed conditions in central Europe. Iron Age Celtic peoples were on the move. Southeast Britain had been invaded in the last century B.C. and the spread of Roman power in Gaul had caused further migrations across the water. In the southwest peninsula Iron Age B peoples moving in from Brittany had established themselves in hill-forts and in lowland settlements such as Glastonbury and Meare. Soon afterwards, elements of this culture spread across the Severn Sea and influenced the South Wales coastlands spreading up the lower reaches of the valleys of the Wye, Usk, and Severn on the eastern side, and fringing the Pembrokeshire (3) and Cardiganshire coast in a coastwise movement northwards (see MAP I). In the lower Severn, Usk and Wye valleys this south-western Iron Age B culture was in contact with the outer fringes of the technically more advanced culture that had been introduced into Wessex by the Belgic refugees escaping from Caesar's pacification of Gaul. The extent of these new influences may be judged by the distribution of the native coinage of the Dobuni—a Cotswold, non-Belgic tribe which had adopted an inscribed coinage in imitation of that of the Commian Belgae of Wessex (4). Belgic influences became more marked in this region after the Roman conquest of southeast England in the second half of the first century A.D. Belgic pottery has been found in hill-forts at Llanmelin, Lydney, and Sudbrook in Monmouthshire (5). This infiltration of Belgic culture may even have culminated in the arrival of odd drafts of Belgic refugees in southeast Wales at the time of Caratacus's withdrawal to the west (MAP I).

The completion of the Roman conquest left a marked difference between the Civil Zone in southeastern Britain and the zone of military occupation in the northwest. In the more peaceful times of the second century the Roman town of Caerwent (Venta Silurum) was founded on the lowlands of southeast Wales and in the country-side around were established several Roman villas—residences on the estates of prosperous Roman or Romano-British landlords. Map II shows the distribution of these villas and other large Roman houses within the cultural sub-province marked as region I on the map.

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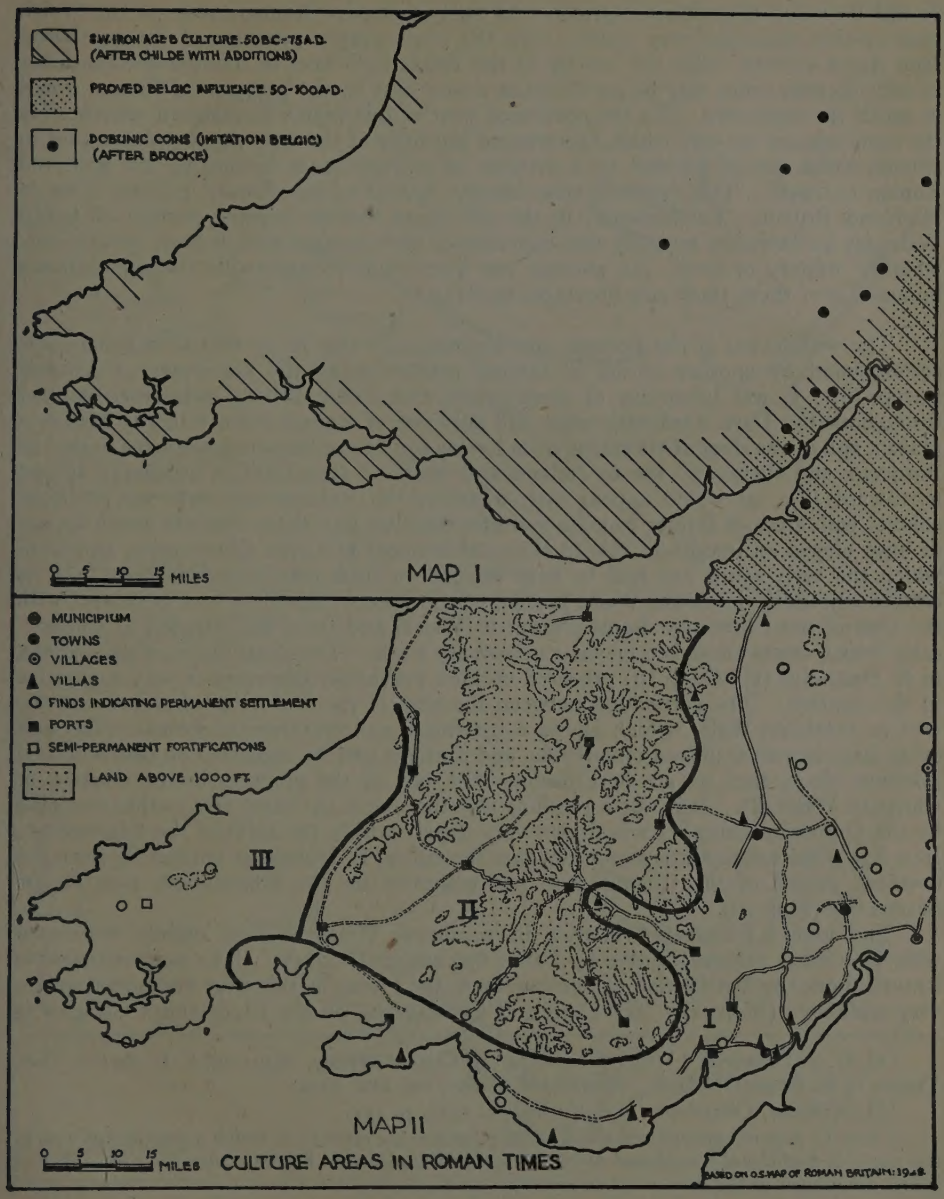
[3] A. Williams, 'Excavations at the Knave Promontory Fort, Rhossili, Glamorgan'. *Arch. Camb.*, 1939, p. 219.

[4] See ANTIQUITY, 1933, VII, 281–2, Map VIII.

[5] V. E. Nash-Williams, *Arch. Camb.*, 1933, p. 237 and 1939, p. 42, also R. E. M. Wheeler's 'Report on site in Lydney Park, Gloucestershire', 1921.


S.W. IRON AGE B CULTURE. 50 B.C.-75 A.D. (AFTER CHILDE WITH ADDITIONS)
PROVED BELGIC INFLUENCE. 50-100 A.D.
DOBUNIC COINS (IMITATION BELGIC) (AFTER BROOKE)
0 5 10 15 MILES
MAP I
MUNICIPIUM
TOWNS
VILLAGES
VILLAS
FINDS INDICATING PERMANENT SETTLEMENT
FORTS
SEMI-PERMANENT FORTIFICATIONS
LAND ABOVE 1000 FT.
III
II
I
MAP II
0 5 10 15 MILES
CULTURE AREAS IN ROMAN TIMES
BASED ON O.S. MAP OF ROMAN BRITAIN: 1948.

It will be noted that this sub-province of fairly extensive Romanization of the Welsh country-side coincides very closely with the trans-marine province of the southwest Iron Age B culture, while the overlap of the Belgic influences in the extreme southeast in early Roman times may be paralleled at a later date by the presence of Roman towns in much the same area. To the north and west of this highly Romanized province lay the mountainous country which experienced but little of the Iron Age B culture, and in Roman times was intersected by a network of military roads linking up the scattered Roman outposts. This territory thus became typical of the Roman military zone of Highland Britain. Furthermore, in the still more remote western portion of South Wales lay an extensive territory that experienced little contact with Roman institutions, whether military or civil. An attempt has been made to demarcate the approximate boundaries of these three sub-provinces on Map II.

The withdrawal of the Romans and the ensuing chaos in southeastern Britain was accompanied by another period of intense activity along the sea-routes of Atlantic Europe (6). It was by means of these routes that Celtic Britain maintained contact throughout the Dark Ages with what still survived of Roman culture in the Mediterranean, and it was along these routes from Lerins and Marseilles across southern France to Bordeaux and thence by sea to Ireland and Scotland that Celtic Christianity spread northwards (7). It would appear that, wherever the western sea-route was in close contact with areas of former Roman civil life, there we find those districts which appear to have played an important rôle in the establishment of Celtic Christianity, and from which the early saints are said to have set out on their missionary journeys. At its eastern extremity the South Wales portion of the western sea-route was in contact with the area of most intensive Romanization in Wales, and from this 'region of contact' early Welsh saints embarked on their missionary work. The distribution of dedications to S. Dubricius (v)* (Map III) prepared on lines previously described is very suggestive in this context. The correlation between the sites of the Dubricius churches and the area in southeast Wales, which shows a maximum concentration of Roman villas and other large houses is indeed remarkable, and it might well be suggested on distributional evidence alone, that we are here dealing with one of the pioneers in the creation of Christian Wales (8). It is worth recalling also that much the same area as that occupied by the Dubrician churches was drawn very closely within the orbit of the Glastonbury Iron Age B culture and it is significant that the cult of S. Dubricius emanating from the northern shores of the Channel was not unknown on the Glastonbury side of the Severn Sea (Map III).

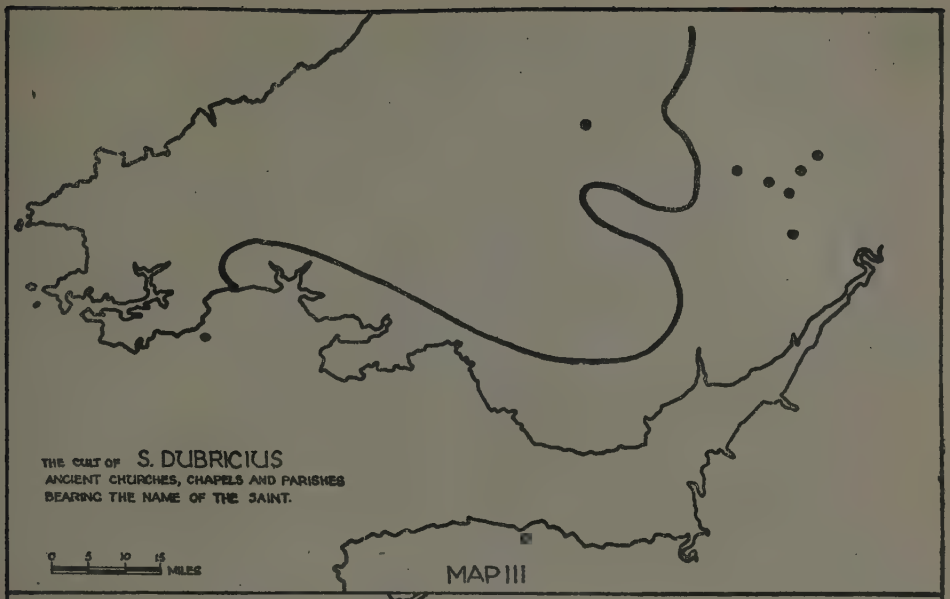
The highly Romanized district in southeast Wales is also closely associated with two other famous saints—S. Cadoc (VI) and S. Illtud (V). The most remarkable feature about the distribution of dedications to the former is that they are spread over a very wide area (Map IV). The church of Cambuslang on the Clyde above Glasgow is

[6] O. G. S. Crawford, 'Western Seaways' in *Custom is King*, 1936, and E. G. Bowen 'The Travels of St. Samson of Dol', *Aberystwyth Studies*, vol. XIII, 1934.

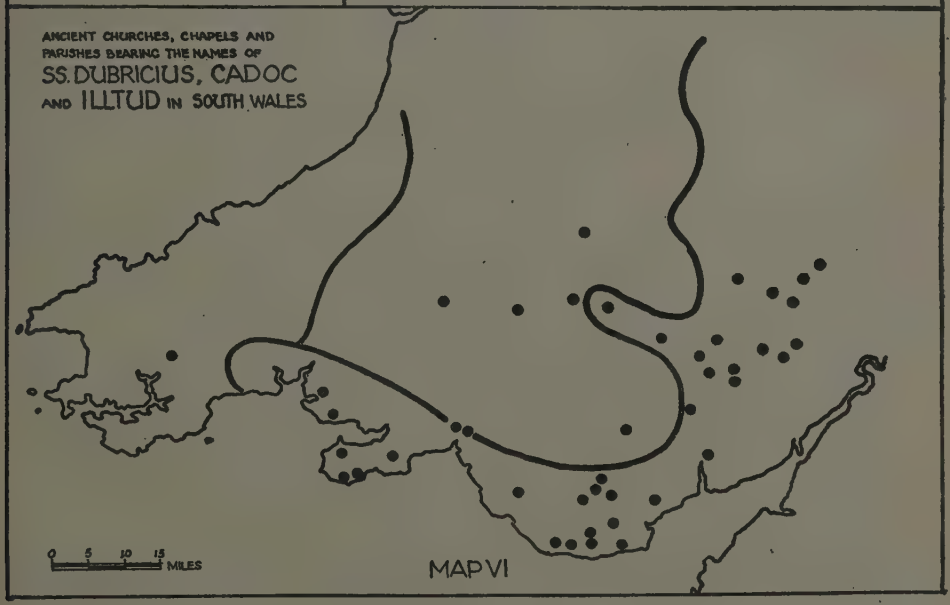
[7] H. Williams, *Christianity in Early Britain*, 1912, p. 354.

* For the sake of convenience and general reference the century in which a saint mentioned in this paper is *traditionally* supposed to have flourished is placed in brackets after the name when it is first mentioned in the text.

[8] Canon G. H. Doble in a recent study of the *Life* of S. Dubricius 'Welsh Saints' series no. 2 (1943), describes him as 'one of the chief figures in the creation of Christian Wales', p. 35.



MAP III



MAP VI

dedicated to S. Cadoc, while there is a Llangadog in Amlwch in Anglesey. In South Wales his famous monastery was located at Nantcarvan in the Vale of Glamorgan and there are several churches dedicated to him in Glamorgan, Monmouthshire and Breconshire. In the parish of Padstow near the shores of Harlyn Bay are the ruins of what was once a very important chapel dedicated to S. Cadoc, while across the Channel in Brittany there are over a dozen churches and chapels which bear his name (**9**). Such a very wide distribution of dedications is unusual for a Celtic saint, yet the overall picture is by no means out of keeping with the view that, with the revival of the western sea-routes in the post-Roman centuries, the entire Celtic Fringe was united under the cultural stimulus of Celtic Christianity, and that movement of individuals such as S. Cadoc and his followers from one peninsula to another was not uncommon. It would seem, however, that former connexions between South Wales and Strathclyde were considerably disturbed following upon the upheavals associated with the movements of the Sons of Cunedda in the middle of the fifth century. The dedication-distributions of later South Wales saints show them to have confined their activities to South Wales (sometimes together with Southern Ireland), Cornwall and Brittany. It is, therefore, possible to argue that S. Cadoc's work in Strathclyde precedes the severance of the western sea links between South Wales and this region which may have been complete in the cultural sense soon after the middle of the fifth century.

The distribution of dedications to S. Illtud (Map v) shows very plainly that his main activities were confined to South Wales and Brittany without apparently the usual Cornwall linkage. He is unknown in Strathclyde. There is, however, one interesting outlying dedication in northwest Wales—Llanelltyd in Merionethshire. This name preserves the undoubted Brythonic form of the saint's name—Elltud, while elsewhere (e.g. Llanyltwyt or Llaniltwyt—the medieval spelling of the saint's famous monastery in the Vale of Glamorgan) the Goidelic form of the name is preserved (**10**). Thus, S. Illtud may well have been a Brythonic or a ' Cunedda ' Welshman from North Wales who at an early date (subsequent, however, to the time of S. Cadoc) was attracted to the monastic schools of southeast Wales and whose subsequent life-work was largely devoted to these parts.

The above paragraphs have attempted to provide a relative chronology for SS. Dubricius, Cadoc and Illtud on *a priori* reasoning from distributional evidence alone. This, however, must not be allowed to mask the overall picture obtained by a study of Map VI, which shows on one diagram all the churches in South Wales dedicated to these three pioneers. The vast concentration of dedications within the highly Romanized zone in South Wales is unmistakable, while even the few which lie beyond are located near to the Roman military roads (**11**). A corollary of this general distribution is that the sites are largely lowland ones—a factor made perfectly clear when it is calculated that the average elevation of the Dubricius, Cadoc and Illtud sites in South Wales is only 257 feet above sea-level. It should be noted that the Cadoc-Illtud churches occupy sites along the coastal plain well to the west of the Dubricius group. This is only to be expected if we are dealing with a group of dedications associated with a somewhat later stage in the Christianizing of these parts.

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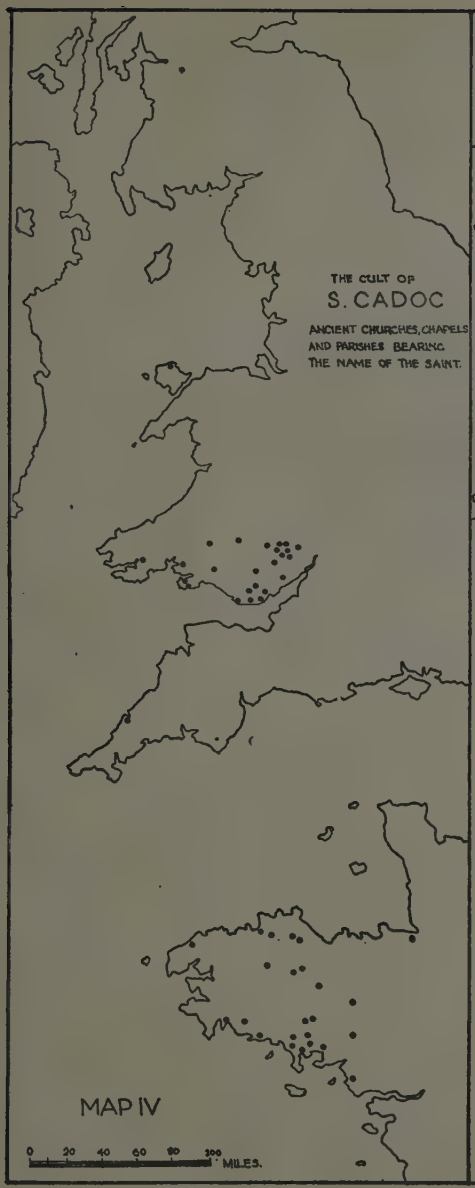
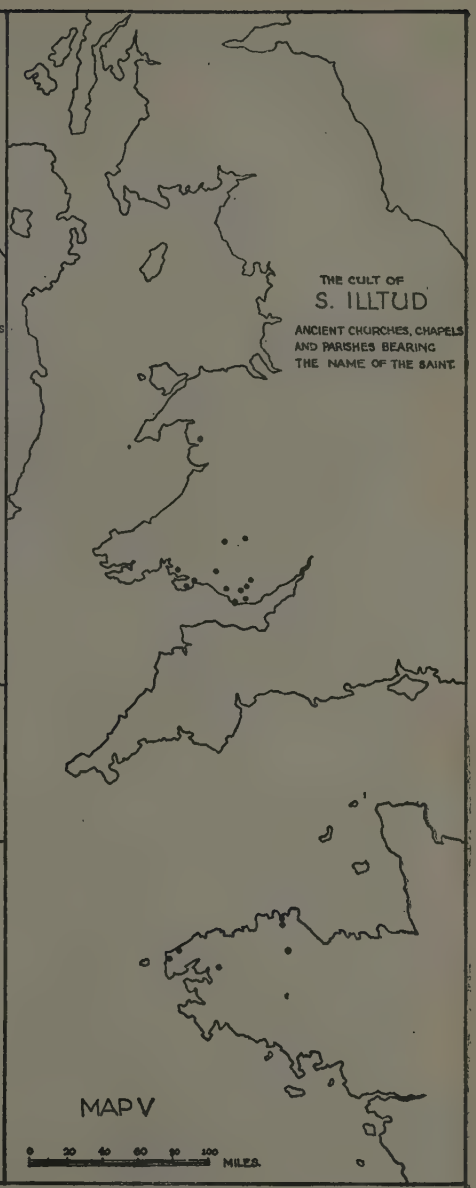
[9] G. H. Doble, *St. Cadoc in Cornwall and Brittany*, 1937, p. 15 ff.

[10] Sir John Rhys. ' Gleanings in the Italian Field of Celtic Epigraphy '. *Proc. Brit. Acad.*, VI, p. 315.

[11] It is worth noting that Illtud's monastery at Llantwit was located within sight of the ruins of a Roman villa in South Glamorgan.


THE CULT OF
S. CADOC
ANCIENT CHURCHES, CHAPELS AND PARISHES BEARING THE NAME OF THE SAINT.
MAP IV
0 20 40 60 80 100 MILES.


THE CULT OF
S. ILLTUD
ANCIENT CHURCHES, CHAPELS AND PARISHES BEARING THE NAME OF THE SAINT.
MAP V
0 20 40 60 80 100 MILES.

We now turn to the consideration of another group of dedications traditionally linked with the descendants of an early princeling of South Wales—Brychan of Brycheiniog (v). Brychan is famous not as a saint but as the father of saints, and the number of his progeny became considerably amplified in the imagination of the Norman clerks of the Middle Ages. No two known lists of them agree in every detail; some saints are referred to in one list as sons and daughters of Brychan and the same persons as grandsons and grand-daughters in another. Such is the unsatisfactory nature of the written material that it is impossible to arrive at an agreed list and so, for the purposes of this paper, I have taken the earliest known list of the Brychan family given in the British Museum MSS Vesp. A XIV, and listed for South Wales the churches and chapels (if any) dedicated to each of his eleven saintly sons and twenty-five saintly daughters referred to therein. The total number of such dedications that can now be traced in South Wales amounts to twenty-nine.

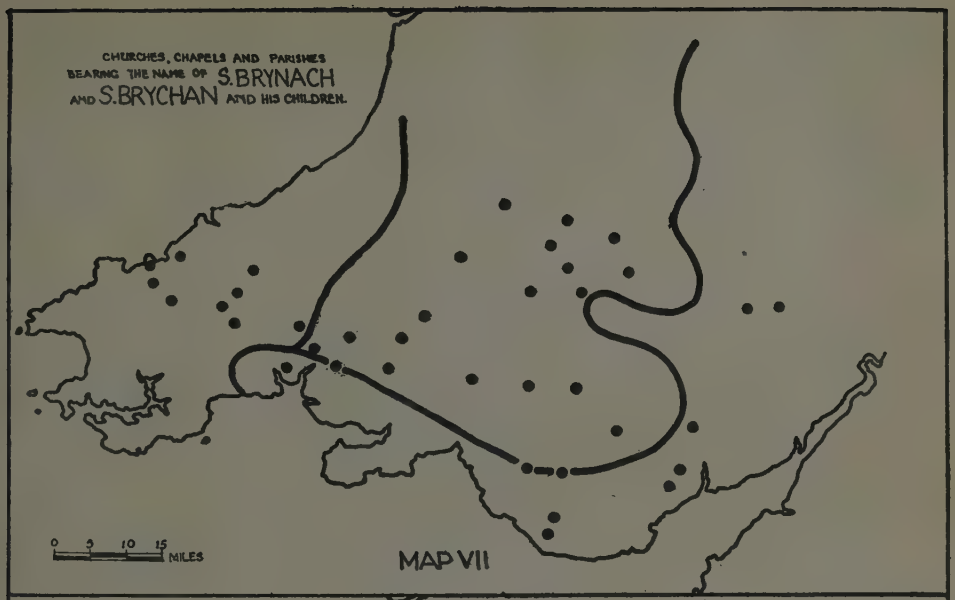
Brychan's associations betray Irish affinities, and for that reason as well as for traditional family links I have included on the map showing the dedications ascribed to the children of Brychan, the dedications to S. Brynach of Nevern (VI) as well. The form of his name also, as well as the fact that he is traditionally remembered as Brynach Wyddel, indicates his Irish affinities. In this way it is hoped that the assemblage of dedications now under review give at least an outline picture of the work accomplished in South Wales by a group of Celtic saints with strong Irish associations. An examination of this data in map form (Map VII) is at once revealing. The traditions regarding the Irish associations of these saints are largely confirmed by the fact that the Ogam inscribed stones of the Dark Ages are found very largely in much the same areas in South Wales as the Brynach–Brychan churches (see Map VIII). In some instances, as at Nevern and elsewhere, the Ogam stones are found in direct association with the church itself (12); but frequently the stones stand apart from the churches. Nevertheless, the importance of the Ogam stones in the south-western peninsula and among the uplands of Glamorgan and Breconshire is clearly reflected in the distribution of the Brychan–Brynach churches.

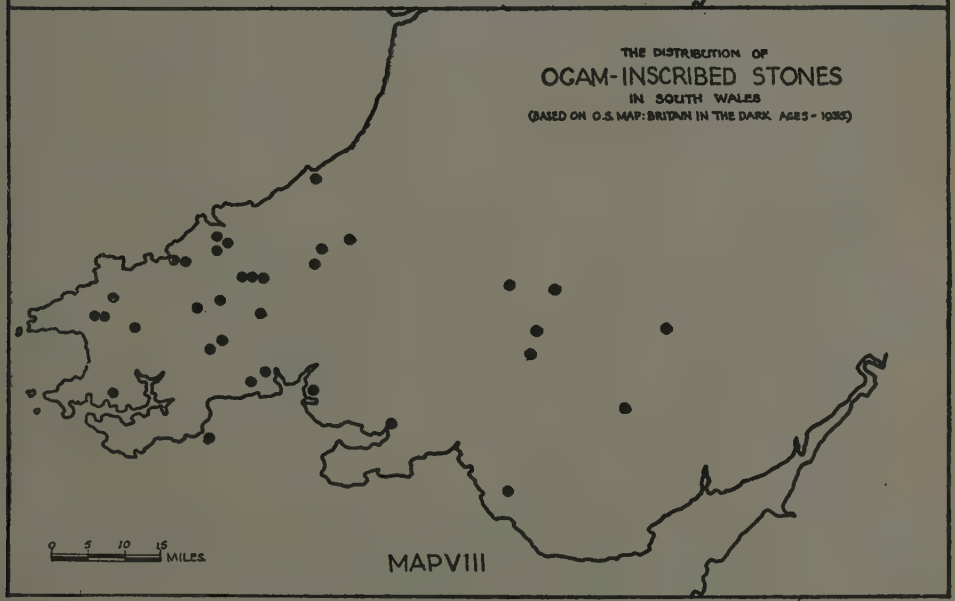
When this distribution pattern is related to the cultural provinces marked on Map II it follows that the majority of the dedications will lie in areas II and III rather than in the highly Romanized area I. The Brychan saints appear to be operating in the upland areas which had been but lightly Romanized as compared with the Glamorgan seaplain. This fact is immediately reflected in the difference in the average elevation of the Brychan-Brynach churches as compared with those dedicated to SS. Dubricius, Cadoc, and Illtud. The average figure for the former group is 463 feet; that for the latter group is 257 feet. On cultural grounds this distinction between the highland and lowland in South Wales is not surprising to the archaeologist and prehistorian. Lady Fox has recently (13) suggested that the siting of the inscribed stones in this area may indicate differences in burial customs between these same zones at much the same period as that now under review.

An examination of the Brychan-Brynach dedications in the non-Roman region III yields new and interesting features. The dedication distribution brings out very clearly the importance of prehistoric distribution patterns—especially the significance of the trans-peninsular route from the Gwaun-Nevern entries to Carmarthen Bay. Archaeological

[12] Royal Comm. Anc. Monts., VII. County of Pembroke, 1925, no. 782.

[13] Lady A. Fox. 'The Siting of some inscribed stones of the Dark Ages in Glamorgan and Breconshire, *Arch. Camb.*, 1939, XCIV, pt. I, p. 39.


CHURCHES, CHAPELS AND PARISHES
BEARING THE NAME OF S.BRYNACH
AND S.BRYCHAN AND HIS CHILDREN.
0 5 10 15 MILES
MAP VII


THE DISTRIBUTION OF
OGAM-INSCRIBED STONES
IN SOUTH WALES
(BASED ON O.S. MAP: BRITAIN IN THE DARK AGES - 1935)
0 5 10 15 MILES
MAP VIII

distribution maps show that this trans-peninsular route (making an important link between South Wales and Ireland) had been in operation since the days of the Megalith builders who moved along this route nearly two and a half millennia before the Age of the Saints (**14**).

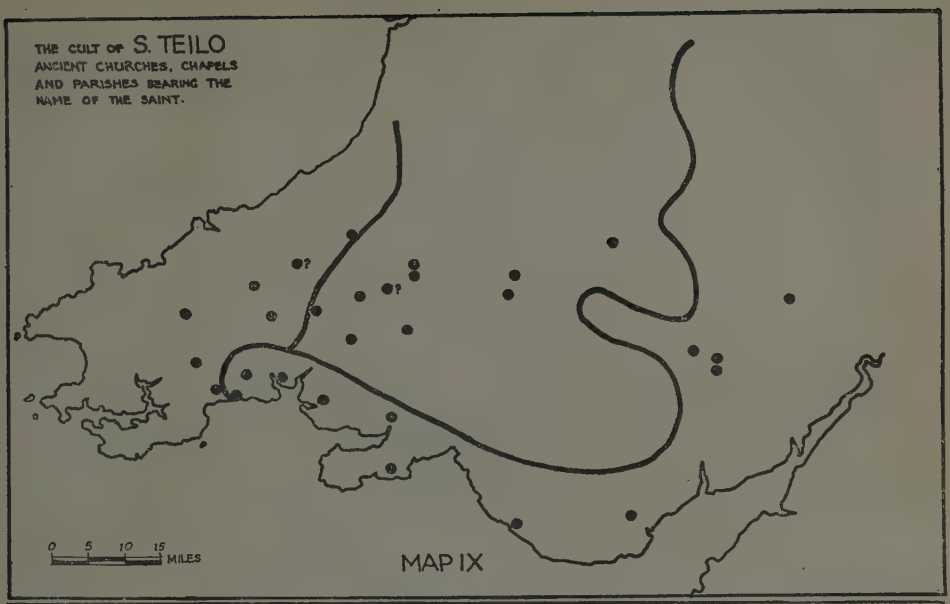
It is not possible with the evidence at our disposal to decide the question as to which of the two groups—the Dubricius-Cadoc-Illtud or the Brychan-Brynach—is the earlier. They might well have been contemporary. Looked at in retrospect, the significant feature suggested by the distribution maps is that the former group of saints ministered in the highly Romanized zone in South Wales, while the latter group Christianized those areas where pre-historic traditions were definitely stronger.

No study of South Wales in the Age of the Saints would be complete if mention were not made of the dedications attributed to SS. Teilo (VI) and David (VI) (Dewi Sant).

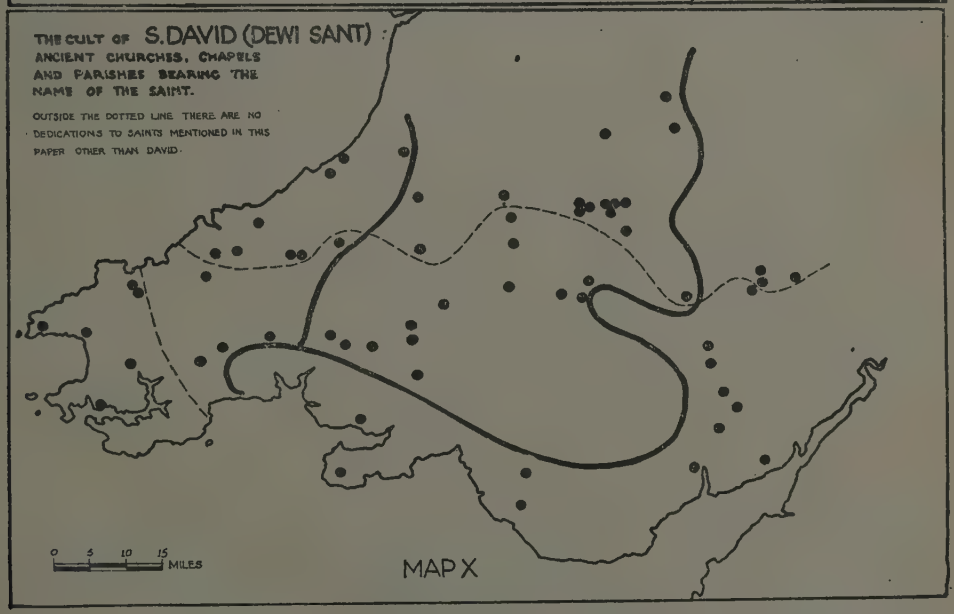
In total number of dedications alone they merit serious attention. As is the case with so many other South Wales saints both Teilo and Dewi are remembered in Cornwall and Brittany as well as in their native land, but unlike Cadoc and Illtud they have no dedications in Wales north of a line from the mouth of the Wyre river in Cardiganshire to Glasbury on the Wye. In this paper we are concerned primarily with their foundations in South Wales. Map IX shows the distribution of Teilo dedications and it is clear that they are not confined to any one of the major cultural provinces shown on Map II—they appear to override them all. The inference is that in the case of S. Teilo we are dealing with a late stage in the story of Celtic Christianity in South Wales when the differences between the Romanized and non-Romanized areas were of less account. A closer inspection of the distribution pattern shows that S. Teilo appears to have laboured in both the Dubricius-Cadoc-Illtud area as well as in the upland region where the ' Irish ' saints were strongest. It is significant that in both zones the majority of the dedications is to be found in their western portions, indicating presumably that the Teilo cult emanated from west Wales rather than from southeastern Wales. This, of course, is in accordance with the tradition that the saint's headquarters was at Llandeilo Fawr in the Towy valley. This broad tract cuts across the mountain zone of Region II (Map II) providing S. Teilo and his followers with several low-lying sites among the hills—territory largely neglected by the older upland culture. S. Teilo has also left foundations in the purely non-Roman country to the westward and here again it would appear that he was avoiding the territory already strongly occupied by the ' Irish ' saints. His dedications, except for those in southwestern Carmarthenshire, leave the trans-peninsular route-way fairly clear for his ' Irish ' associates. It should be noted finally that the average altitude of the Teilo churches in South Wales is a low one—288 feet—more in keeping with the Dubricius-Cadoc-Illtud tradition than with that of the ' Irish ' saints. Therefore, on distributional evidence alone, it would appear that S. Teilo was a very late saint who established in West Wales the Christianity of the southeastern seaplain, occupying low-lying land on the fringes of areas previously Christianized.

S. David is often associated with S. Teilo in the legendary literature that has come down to us, and it is frequently asserted that they laboured in much the same areas. Map X, showing the distribution of dedications to S. David does lend some justification

[14] Sir C. Fox. *The Personality of Britain.* National Museum of Wales, Cardiff. 3rd edition 1938, p. 10. Note also that this trans-peninsular route is clearly marked on Map VIII in this paper showing the distribution of the Ogam inscribed stones.


THE CULT OF S. TEILO
ANCIENT CHURCHES, CHAPELS AND PARISHES BEARING THE NAME OF THE SAINT.
0 5 10 15
MILES

MAP IX


THE CULT OF S. DAVID (DEWI SANT)
ANCIENT CHURCHES, CHAPELS AND PARISHES BEARING THE NAME OF THE SAINT.
OUTSIDE THE DOTTED LINE THERE ARE NO DEDICATIONS TO SAINTS MENTIONED IN THIS PAPER OTHER THAN DAVID.
0 5 10 15
MILES

MAP X

for this view if we consider only the forty per cent of the Dewi dedications within the dotted boundary lines shown on Map x. It would appear that S. David, like S. Teilo, operated from a western base, but it is also clear that he carried the Christianization of South Wales many steps further than S. Teilo. The really significant feature of his dedication-distribution is that more than half of his foundations lay in areas in which none of the saints previously mentioned in this paper seem to have laboured. He worked over old ground and opened up ' pastures new ' in what would appear to have been at that time remote and inaccessible regions. Dewi's foundations are thus on both high and low ground with an average elevation of 428 feet. This has very little meaning for the group of dedications as a whole and serves only to bring out the contrast with S. Teilo's foundations. Such a widespread distribution of dedications may in part be due to a revival of the saint's cult in the Middle Ages, but it is much more likely to be associated with the ancient tradition that Dewi was a Dyfrwr or a ' Waterman ' (Aquaticus), the head and leader of those saints whom Gildas had occasion to praise (**15**)—in fact the leader of a puritan revival. As such he would at one and the same time ' cry in the wilderness ', and seek to recall wayward followers to repentance (**16**). Parallels may be instanced from later religious distributions. John Wesley had great success among the people of Cornwall and Devon, Derbyshire and the Pennine uplands who were largely outside the influence of the earlier Dissent, but his converts were obviously not confined to such areas. Similarly, in Wales, Howell Harris and Daniel Rowland left their deepest impression in northern and western Wales which lay largely beyond the influence of the Dissenters who were firmly established on the English Border and in the counties of South Wales ; yet, again, Calvinistic Methodism is by no means confined to the northwestern area of Wales—the revivalists also attacked the area dominated by the older Dissent.

We are now in a position to review the settlement of the Celtic saints in South Wales. We have considered it in three phases ; a very early one which influenced largely the low-lying, highly Romanized area of the South Wales seaplain ; a second phase, perhaps also early in date but definitely ' Irish ' in association, which influenced the partially Romanized highlands of Glamorgan, Breconshire and Carmarthenshire, together with the non-Romanized western peninsula ; and a third phase, possibly much later in date, represented by the work of SS. Teilo and Dewi—the former inheriting much of the older lowland culture while the latter covered old and new ground in a movement that was probably largely reactionary. An echo of the difference between the earlier Cadoc-Illtud and the later Teilo-Dewi movements here suggested is found in the well-known traditions that have survived concerning the fame of the great monastic schools of Llancarvan and Llantwit for classical as well as for Christian learning, while no such traditions of ancient learning (which might have owed so much to the Romano-British past in the lowland zone) have ever been associated with S. Teilo's ' podum ' at Llandeilo Fawr or with the patron saint's austere settlement in remote Glyn Rhosyn.

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[15] Gildas (Cymrod. Record series no. 3), pp. 160–1.

[16] The Anc. Mont. Commission (Wales), vol. v, no. 429, gives the parish church of Llangadog Carmarthenshire, as dedicated to S. David, and S. Baring Gould and Fisher, *Lives of the British Saints*, vol. II, p. 316, give the dedication as S. David with S. Cadoc. This would appear to be an interesting example of an original Cadoc foundation (situated on the western fringes of the cult) being taken over by the devotees of the later saint.

Life in Ancient Hadhramaut

by Harold Ingrams

The Tombs and Moon Temple of Hureidha (Hadhramaut). By Gertrude Caton-Thompson, F.S.A. Reports of the Research Committee of the Society of Antiquaries in London, no. 13, pp. xv, 191, 80 plates. Oxford University Press. 1944.

LIFE in desert regions is so difficult that man never succeeds in overcoming his environment to any great extent and generally manages to do little more than survive. Most of Arabia is desert, but of the desert areas which from an Arab point of view are habitable there is probably none more difficult than the Hadhramaut, or Hazarmaveth as it is called in Genesis. Whatever western scholarship has to say about the word, to the Arabs it has never meant anything but the Valleys of Death, no doubt because of the precariousness of life, for most of the population live on the verge of starvation. In order to keep themselves alive they have to find money from outside to pay for their imports, and today there are 250,000 Hadhramis living in the country, and another 100,000 outside earning money in more favoured lands. The goods bought with this money are landed on the coast of the Hadhramaut, where they pay duty, and arrangements are made with the Beduin carriers to transport them to the interior by camel.

Taxes may have to be paid to the chiefs through whose countries the loads must pass, if they are strong enough to demand them; for, wherever there is sufficient fertility of soil and water, settlements have grown up, and if the chiefs who own them are strong enough they can protect them and demand taxes on the traffic. In these oases the settlers grow dates and crops and keep their herds. How the settlement prospers depends on how far the chief can give the farmers protection, for any sign of weakness means that the ever hungry Beduins will raid the palm groves or carry off the goats and cattle. Not all these oases, however, are protected by walls or watch-towers, or by the vigilance of their inhabitants. All over the country there are places of sanctuary where not one of the inhabitants is armed. These are the dwellings of seiyids or sheikhs, ruled by mansabs, in whose care are the shrines—the tombs of bygone saints to which pilgrimage is made. These places are sacrosanct and to this day suffer little or no interference from the Beduins who have a superstitious regard for the sacred dead and to some extent for the sacred living. Of these two classes, seiyids and sheikhs, the sheikhs are the older and native to the country, for the augmentation of the mansabs by the seiyids dates only from 844, when Ahmed bin 'Isa, their ancestor, came from Basra. Before his arrival the sheikhs were the principal ecclesiastical influence in the country and were no doubt the descendants of the earlier ecclesiastical hierarchy formed by the priesthood of the old religion. They flourish alongside the seiyids in all the more populous areas, but it is generally they who alone are found in and around the sites which were once the chief centres of population and have now gone back to virtual desert. In this way has Islam adopted in the Hadhramaut its organization of the more vital elements of the old faith. Some sanctuaries are now completely deserted by permanent settlements, but it is still safe to take sanctuary in them or to leave property there with the knowledge that none dare steal it.

When at last the Beduins with their camel loads of goods from the coast come to their destination—if indeed the caravan has not been looted by stronger Beduins on the way—it will probably be to a walled town and at the gate taxes must again be paid to the

ruler before the loads are finally handed over to the consignee. Thus the price of a load is often double or more its landed cost at the coast and before it is consumed the merchants' profits must be paid. So the money earned abroad keeps not only the families of those who have earned it in distant Java but also all those who have handled the goods through whose territory they have passed.

It is not easy to say when the Hadhramis first began to migrate. We know that Arabs from the south coast of Arabia were travelling to east Africa long before the 7th century B.C., but these were perhaps mainly seafaring folk, and in the first century they were intermarrying with the people. Arabs were not present in Malaya in any considerable numbers much before the 14th century, but it is clear that for the best part of 2000 years emigration has continued to grow until now one out of every three or four Hadhramis lives abroad. In their own country the settled people live for the most part either on the coast or in the Wadi Hadhramaut and its larger tributaries, where a settled life is possible ; and in the course of time the principal kingdoms of the Qu'aitis and Kathiris, the former on the coast and the latter in the interior, have grown up, separated by 150 miles of barren steppes.

The little we know of ancient Hadhramaut makes it clear that 2000 years ago life went on very much as it does today, but the money from abroad came not from Java or Zanzibar but from Egypt, Greece and Rome. From Egypt, to which it had been brought overland to the Upper Nile by the people of Punt, the Mediterranean countries learnt to regard incense as indispensable in worship and at funerals, and incense could be found only in Somaliland and south Arabia. In the latter there were two areas, a lesser one in the Hadhramaut proper, and the other further to the east in the country of Dhofar. In this latter the incense was brought by sea to Cana, the Canneh of Ezekiel, the modern Husn Ghurab or (Raven Castle) near Bir 'Ali, whence it was carried by camel to Sabbatha or Sabota, the modern Shabwa. Pliny describes the way in which the incense of the Hadhramaut was taken to Shabwa :

> ' The incense after being collected, is carried on camels' backs to Sabota, of which place a single gate is left open for its admission. To deviate from the high road while carrying it, the laws have made a capital offence. At this place the priests take by measure, and not by weight, a tenth part in honour of their god, whom they call Sabis ; indeed, it is not allowable to dispose of it before this has been done ; out of this tenth the public expenses are defrayed, for the divinity generously entertains all those strangers who have made a certain number of days' journey in coming thither. The incense can only be exported through the country of the Gebanitae, and for this reason a certain tax is paid to their king as well.
>
> ' There are certain portions also of the frankincense which are given to the priests and king's secretaries : and in addition to these, the keepers of it, as well as the soldiers who guard it, the gate-keepers and various other employees, have their share as well. And then besides, all along the route, there is at one place water to pay for, at another fodder, lodging of the stations and various taxes and imposts besides ; the consequences of which is, that the expense for each camel before it arrives at the shores of our sea (the Mediterranean) is 688 denarii ; after all this, too, there are certain payments still to be made to the farmers of the revenue of our empire '.

In other words the method of transport of goods to the interior, and their taxation, differed in nothing from the methods of today. To one who lives in the Hadhramaut there are many stories to be found in the Bible or in the classical writers which ring familiarly, for you can match them any day, and from these ancient sources and from

what one can see of ancient remains in the country it is not difficult to get a general picture of what the life of the Hadhramaut must have been two thousand and more years ago.

For ten years I have wandered far and wide over the Hadhramaut from Azzan and the incense road in the west to the Wadi Maseila in the east, and I am still the only European who has travelled these two great thoroughfares. In the course of these wanderings I have come across many ancient traces, which, as a layman, I divide into two categories, those belonging to a stone age and those belonging to the Himyarites ; in several places relics of a stone age intermingle with those of the Himyarites and I was the first to find them in juxtaposition at Gheibun.

My justification for the use of the term Himyarite is first that it is a convenient and more distinctive term to use than south Arabian, which may refer to something either ancient or modern, and secondly that the people, language and ruins of the ancient South Arabian kingdoms are always referred to by the more intelligent of the Arabs of the country as ' Himyari '. The Beduins attribute them to the ' Ayal 'Ad ', the sons of 'Ad the son of Uz, that legendary race of giants who lived and perished as infidels in ancient Hadhramaut.

Whether there was much difference between the pre-Himyaritic stone age of Hadhramaut and Himyaritic times, so far as one can visualize it from the ancient writers and a knowledge of present Hadhramaut, I do not know ; but I rather suspect that the former belonged to the pre-incense days, and that the population was much smaller than it was when the wealth of the incense trade or of the Indies enabled a section to expand and live a fairly civilized life. I expect that these stone-age people lived very much the life that the Beduins of the northern jols of the Hadhramaut on the edge of the Rub'al Khali live today, except that the latter have firearms. On those northern jols you find chert instruments scattered around defence positions much like those the Beduins still build. You find also outcrops of flint from which the Beduins still chip their strike-a-lights.

The accompanying sketch-map shows most, if not all, the known ancient sites of the Hadhramaut and that the chief towns were in the west on the incense road. These were also the best built towns. There is not a great deal of fortification along this road, which suggests that it was well under control. Eastwards another route lay through the Hadhramaut. This was perhaps a later development as ruins in Wadi 'Amd, of Gheibun and Sune are inferior to those of Shabwa, and some at least have been thought more modern. This route went on down the Wadi Maseila to the sea and was fortified. This suggests that the way was sufficiently important to be kept open, but that the country was hostile and not controlled. Here and there are graffiti on other routes and these seem plainly to have been minor routes, including that through Mola Matar to Du'an. There is enough evidence, supported by the Periplus and Pliny, to be sure that the Cana-Sabota road was the main incense road. Was the Maseila road also an incense road, opened after the fall of Aden and Cana and the shifting of the inland capital from Sabota to Shibam, until at last the incense trade of Dhofar went by sea ? The red painted inscriptions at Sad suggest that the Dragon's blood of Socotra was also carried by this route.

West of the habitations of the ancient Hadhramis, in the modern Yemen and in the northwest part of the western Aden Protectorate, lay the other south Arabian kingdoms. The principal ruins are those of Marib, the ancient Mariaba, capital of Saba, as yet inaccessible to western archaeologists, though some of their secrets have been made known by two bygone explorers. The kingdom of Saba was plainly stronger and more extensive than that of the Hadhramaut, just as Yemen is today a much richer and more self-sufficing country than its poorer neighbour.

It is clear that in ancient Hadramaut the main centres of population lay to the west

of those of today and the ancient Meipha Metropolis and Sabota corresponded to Mulalla and Seiyun. Meipha Metropolis is now entirely deserted, though the wadi in which it lies is still called Wadi Meifa'a; but in Shabwa, though the desert has reclaimed its own and though the wide fields which surround it—still marked by their ancient bunds—can no longer be sown, the miserable descendants of the Sabotans eke out a precarious life. On the coast it is still possible in the existing Sultanate of the Wahidis to trace relics of bygone organization. A section of the Wahidis call themselves Himyar and though Cana has now, as its present name denotes, been given over to the ravens, its modern successor—the little walled port of Bir 'Ali—lies scarce a mile away. The Wahidis now have their inland capital at Azzan, a few miles from Naqab al Hajr, by which name the ruins of Meipha Metropolis are known. Possibly Azzan is the Sessania Adrumetorum from which the envoys of the Empress Helena removed the bones which lie in Cologne Cathedral as the bones of the Magi. A day's journey from Husn Ghurab up the incense road to Shabwa is the great wall of Bana mentioned by Ptolemy, which was a boundary between the Himyarites and the Sabaeans, and is still a boundary between the Wahidis and the descendants of the Hadrami tribes formerly dependent on Shabwa, which came under the rule of Himyar when the coastal kingdom conquered that of the interior. These tribes still look on the Wahidi Sultans of Bir 'Ali as their former ruling dynasty.

Life among the rich of the Hadhramaut is today much influenced by the Far East and by European imports; among the poor it is probably very much what it always was. The Periplus tells us what the imports to Cana were. Many of these articles found their way to Meipha Metropolis and to Sabota. ' A little wheat and wine ', we are told, not much because, as at Mocha, the country produced grain in moderate amount. Yemeni grain still feeds the interior of the Hadhramaut and no doubt it provided the bulk of what went to Shabwa. Wine is made by the Jews of the Yemen, but is now a prohibited import, a result of the change of faith.

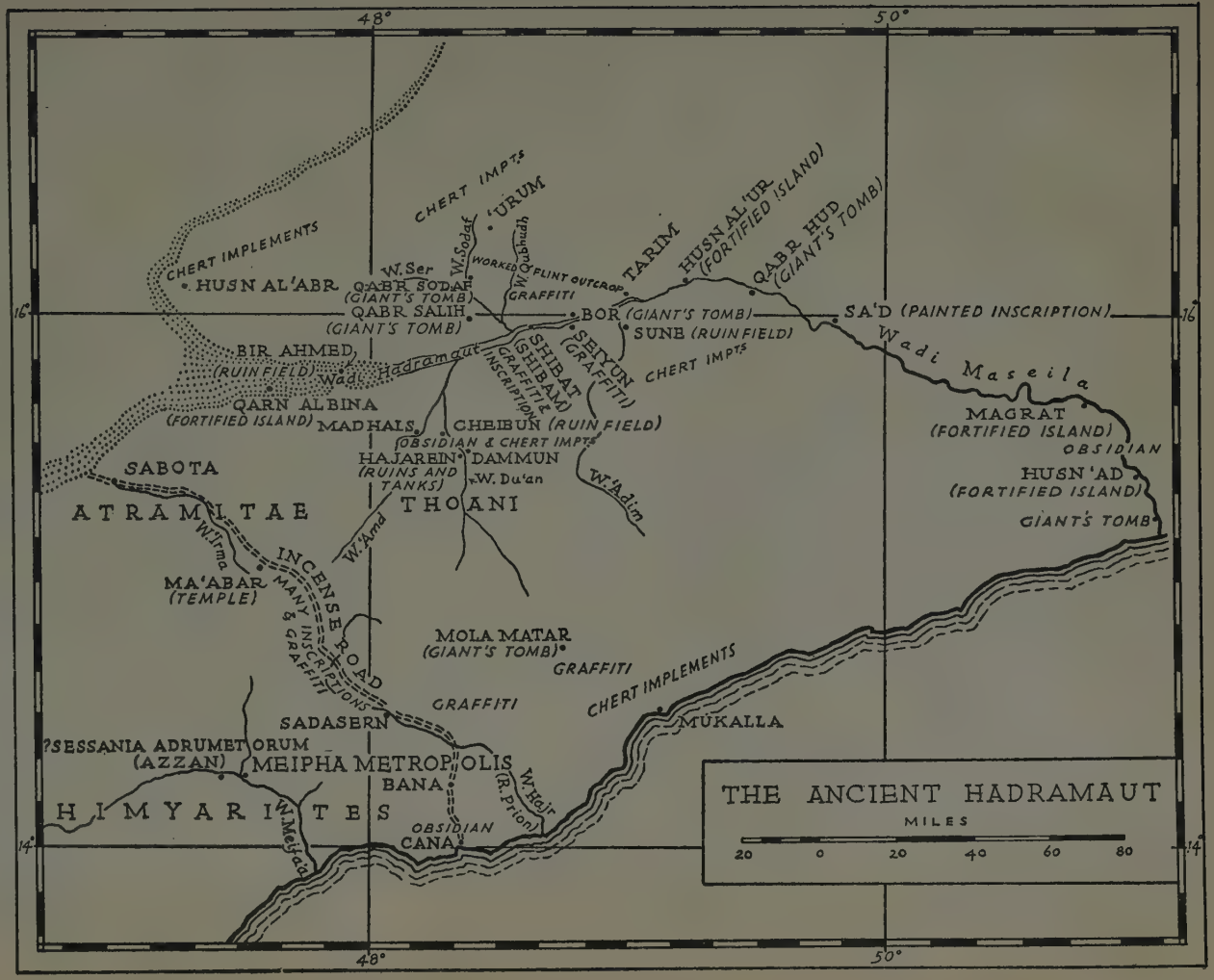
' Copper, tin, coral and storax ' were products of the Mediterranean and brought for re-export to India in Hadhrami shipping, showing that, as today, the Hadhramaut looked east for much of its trade.

' For the king usually wrought gold and silver plate, also horses, images and thin clothing of fine quality '. Some of that gold and silver plate may still remain buried in the ruins of Cana, Meipha Metropolis and Sabota. As for the images, I found one of a winged female figure with a cornucopia at Shabwa. The exports were native produce, frankincense, aloes, myrrh and alabaster. Aloes are still exported.

Making allowance for the times, life in the ports and *suqs* of ancient south Arabia was plainly very much as it is today. Mediterranean politics were as familiar to the ancient South Arabians as are those of the Far East today. The Periplus tells us that Charibael, the king of the Homerites and Sabaites, was a friend of the Emperors Claudius and Nero through continual embassies and gifts.

Just as the Sultans of the Hadhramaut hold sway today in their walled towns, having an uncertain influence over the Beduins in the neighbourhood, so in the old days did the rulers of Meipha Metropolis and Sabota. Meipha Metropolis, a town of the Himyarites, and Sabota the capital of the ' Atramitae ' a community of the Sabaeans, and their Beduins were of the tribes of Kinda whose descendants, such as the Sei'ar, still harass towns and villages in settled communities.

On the east of the old centres of ancient Hadhramaut lay the villages of the Wadis Du'an and 'Amd, and so they lie on the west of the modern centres of the Wadi Hadhramaut. Amongst these is Hureidha of the Wadi 'Amd, a town of the Seiyids of Al 'Attas, mostly with Javan connexions, and the principal outpost of civilization in this


48°
50°
16°
14°
CHERT IMPLEMENTS
HUSN AL'ABR
W. Ser
QABR SODAF (GIANT'S TOMB)
QABR SALIH (GIANT'S TOMB)
BIR AHMED, (RUIN FIELD)
Wadi Hadramaut
QARN AL BINA (FORTIFIED ISLAND)
MADHALS
CHERT IMPTS
'URUM
W. Sodaf
W. Sahuadh
WORKED FLINT OUTCROP
GRAFFITI
TARIM
HUSN AL 'UR (FORTIFIED ISLAND)
QABR HUD (GIANT'S TOMB)
BOR (GIANT'S TOMB)
SA'D (PAINTED INSCRIPTION)
SUNE (RUIN FIELD)
SHIBAT (SHIBAM)
GRAFFITI & INSCRIPTIONS
SEIYUN (GRAFFITI)
CHERT IMPTS
Wadi Maseila
MAGRAT (FORTIFIED ISLAND)
OBSIDIAN
HUSN 'AD (FORTIFIED ISLAND)
GIANT'S TOMB
CHEIBUN (RUIN FIELD)
OBSIDIAN & CHERT IMPTS
HAJARIN (RUINS AND TANKS)
DAMMUN
W. Du'an
W. 'Adim
SABOTA
ATRAMITAE
THOANI
W. Irma
W. 'Amd
INCENSE ROAD
MANY INSCRIPTIONS & GRAFFITI
MA'ABAR (TEMPLE)
MOLA MATAR (GIANT'S TOMB)
GRAFFITI
CHERT IMPLEMENTS
MUKALLA
GRAFFITI
SADASERN
?SESSANIA ADRUMETORUM (AZZAN)
MEIPHA METROPOLIS
BANA
W. Hajr
(R. Ption)
HIMYARITES
W. Meifa'a
OBSIDIAN
CANA
THE ANCIENT HADRAMAUT
MILES
20 0 20 40 60 80

troubled wadi where the quarrelsome tribes of Nahd and Ja'da make life very difficult for themselves and for the seiyids in their midst. These seiyids own date-groves and cultivable lands round their town. For centuries they managed with money from the East to live a moderately comfortable life, for the tribes respected them on account of their descent and credited them with supernatural powers, and feared to interfere with them. But in the Far East they have learnt to regard them as ordinary men and the effects of the ' Irshadi movement, which denied any special position to the seiyids in the East Indies, has had its effect on the security in which the seiyids used to live in Hureidha and elsewhere.

Hureidha was a sanctuary where no man dare interfere with those who sought refuge. It is a great place of pilgrimage to the tombs of the 'Attas, where large fairs are annually held and the produce of the country, camels, goats, and locally made household utensils are sold.

Near Hureidha lie the ruins of a number of the bygone dwellers of the wadi, and to this site in the winter of 1937–1938 came Miss Stark accompanied by Miss Caton-Thompson and Miss Gardner. At that time it was not possible to picture even so much as I have written above of ancient Hadhramaut, for the daily life of the modern Hadhramis was little known, nor were the sites of their ancestors' habitations and activities. None could say how far the few treasured references of ancient writers could help us in linking our knowledge of the new with the old. The arrival of this redoubtable trio into a backwater where little had changed in two thousand years was a great event, as Miss Caton-Thompson says in the few sentences of the remarkable monograph in which she describes her work :—

> ' We may, I think safely, envisage our little community at Hureidha as a population mainly, as now, living on the fruits of diligent, if sparse, agriculture and the products of their flocks. A security from tribal enemies, denied in modern times to their descendants who, for safety, have clustered their little town on rising ground beneath the protecting fortress of the cliffs, seems to have been theirs. From first to last the Temple stood, white, exposed, and unprotected, dominating from its high stylobate the contemporary village, the houses of which may lie still buried on its north-east outskirts. It may be noted that in the whole course of excavation nothing which was certainly a weapon was found . . . Social organization seems to have been based on the tribal system, and the headman of the Ramay clan could enforce maintenance works on the Temple and town from the community '.

Miss Caton-Thompson describes in great detail her discoveries of a small temple, a few tombs and a farmstead. It is obviously a thorough and distinguished piece of research. The work depends not only on her great authority and of her colleague, Miss Gardner, but is reinforced by the reports of experts on every kind of object which the excavations brought forth.

Part I of the book, presumably in the main Miss Gardner's work, describes the physical setting of the site, and in this article I venture to attempt to fit Miss Caton-Thompson's picture into the human background of Hadhramaut. At periods during its ancient history parts of the Hadhramaut had peace, but I do not think it is safe to deduce from the unprotected state of Madhab (which as Miss Caton-Thompson's excavations have established, was the name of her village) that tribal life of the neighbourhood was any more secure then than it was later. Hureidha owed its security not to the protecting fortress of the cliffs but to the tribesmen's respect for the shrines it contains and for the sacred persons of its mansab and seiyids, their custodians. There are many ancient fortified sites in Hadhramaut, and if any one excavates the ruins of Hureidha or Meshhed, or any of the ' Hautas ' of the Hadhramaut in the future, they will

find few traces of weapons. So I think it must have been with Madhab—that it was the sanctity of the temple itself which protected it from assault, and those who served it were as probably unarmed as the seiyids of Hureidha today.

It is in the ruins of the farmstead that we find the familiar objects of daily life. Like all the homes of today it was built of mud brick. Perhaps the bricks were not of the standard size of today, which I find rather surprising, and perhaps the building was not of modern design. That one cannot tell, for it was not a complete building which Miss Caton-Thompson found among the ruins. It seems likely the building had at least two storeys. The goats were kept in the house, and apparently the kitchen was on the ground floor. There were saddle querns and mealing stones, fragments of pottery, a stand for a water jar, a stone trough—the ordinary everyday equipment of a country farm-house of modern Hadhramaut, with only a difference in the shape of some of the pots and a few Himyaritic inscriptions to show that you were dealing not with the ruins of a modern home but with one of over 2000 years ago.

I find of great interest what Miss Caton-Thompson has to say of culture contacts and especially of those with ancient Persia. In view of what Hadhramaut culture owes to Persia it is strange that there is so little on record. It seems unlikely that Persians ever came to the Hadhramaut in large numbers or lived there, and one presumes that Hadhrami architects introduced the Persian style, just as today Hadhramis who have lived long years in Java and Singapore are introducing Chinese ideas into their architecture. But if of old the Hadhramis sought fortunes in Persia what made them stop migrating there ?

Had not Miss Caton-Thompson spent those pioneering months in a backwater of ancient Hadhramaut, this story of life in a country village might never have been made known. If as I hope she goes again to the Hadhramaut it will be no doubt to the ancient capital and its neighbourhood. The main interest of excavations of Hadhrami must lie in dating material rather than art, for Miss Caton-Thompson's explorations have only confirmed what I think has long been obvious, that the artistic talent of the Hadhramis was wretchedly poor compared with that of the ancient countries lying to the east and west of it, unless of course there is undiscovered remains of a civilization several millennia older connecting with those of Egypt and Sumer. I much sympathize with her remark that she likes to delude herself with the idea that Muhammad's ban on the fashioning of images was due to aesthetic distress at the result. It has been said that the lack of art in the Hadhramaut is due to the Islamic prohibition of portraying living things ; but it is quite clear nothing has been lost by this. The pre-Islamic Arabs of the south had no more artistic talent than their Muslim descendants of today. They were far behind some African and Indonesian tribes in such matters. To this one must except only their architecture. The ancient south Arabians built well in stone, shaping their blocks better and carving their cumbrous monumental script with a greater skill than could the Hadhramis of today. But these latter are superb architects in mud and in this medium are no whit inferior to their ancestors working in stone. Taking it all in all, the Hadhramis of today seem to me neither better nor worse than their ancestors in their way of life and the things they make. The Hadhramaut is on the whole a country where time stands still.

The changes of the last two thousand years are due mostly to the change of religion, the transfer of the source of outside wealth from west to east, and the introduction of modern firearms. What has happened during the last few years may have given the country another period of peace similar to some it enjoyed in ancient times ; but there is only one of two things which can greatly change the manner of life—the provision of vast sums of money from outside, or the discovery of water. Failing these the power of the desert is unassailable.

Concerning Unicorns

by W. H. Riddell

'To travel hopefully' says Robert Louis Stevenson 'is a better thing than to arrive': and whoever would track a legend to its source must needs be an optimistic traveller, for his prospects of reaching his destination are remote. The man who indulges in this form of sport—and it has its fascinations—soon becomes aware that amid the records of the Ancients, which form his Happy Hunting-ground, inaccuracy and credulity abound; whereas dependable facts are few and far between. Somewhere or other a story starts—the narration of some actual incident or spectacle outside the common run. It passes from mouth to mouth, amassing a gradual increment of falsehood as it goes; until, by the time it crystallizes into legend it has become a fabrication inseparable from fiction, except perhaps for the survival within it of some chance and apparently superfluous detail, which gives us a clue to its origin and to the incident which give it birth.

Take as an example the account of Scylla and Charybdis in the Odyssey. The doings of these two sinister creatures were evidently a current legend in Homer's day—a legend which he makes use of, as always, for his own poetic purposes. That he (1) tells the story as he got it we need not doubt: that what he tells us is, to say the least of it, an exaggeration we need doubt still less. We find in it, however, two comparatively insignificant and irrelevant details which suggest how and where the story came about. The first is the careful description of Scylla's rock—a high peak rising abruptly from the sea with a constant streamer of cloud at its top (Odyssey, book xii: l. 70 et seq). Now this happens to be an extraordinarily apt description of the Rock of Gibraltar, in summer time, during a long spell of east wind—the dreaded and persistent Levanter—which invariably caps the Rock's summit with a lowering and stationary cloud. (2) The second quite different detail suggests the same locality and tends to confirm it. Charybdis draws in and expels the water three times a day (Odyssey, book xii: l. 104 et seq); and not, as one would expect, if she were the invention of pure fiction, whenever a ship passes by. If we allow for the exuberance of a lively, ignorant narrator and reduce the periodic activities of Charybdis from three times a day to twice, we arrive at a fairly close picture of the daily ebbs and flows of the tide. The Mediterranean is practically tideless. The strong ocean-tides of the Gibraltar Straits were for the earliest navigators and explorers a new and startling phenomenon. Their reports of it, grossly overstated, were perhaps the germ from which the legend of Charybdis grew (3). As an additional confirmation we may note that Ceuta, the African Pillar of Hercules, is much lower and flatter than Gibraltar—the European Pillar; and this is precisely how Homer describes the lurking place of Charybdis in comparison to Scylla's sheer rock. It may be

[1] Or whoever the author of the Odyssey was.

[2] There is, be it observed, no hint of fire or volcanic action.

[3] When the strong outward-going Mediterranean current meets the incoming Atlantic tide, whirlpools are liable to occur in the Straits; as more than one long-distance swimmer has discovered.

also that the weak yelping of Scylla, ' no greater than the voice of a new born pup ', is an echo of the Barbary Apes of Gibraltar, which still survive there in small and carefully protected numbers.

Homeric scholars, it is true, almost unanimously locate the scene of Scylla and Charybdis in the Straits of Messina, and it is more than likely that Homer had these Straits in mind when he wrote ; although his description in no way tallies with that locality. But if there is one thing more remarkable than any other in the birth and growth of legends it is their airy disregard for time and space. A legend locates itself in either, according to the immediate taste and fancy of its narrator ; and this faculty of levitation is a marked characteristic of the particular legend that I have here set out to discuss—the Legend of the Unicorn.

Every one knows today that the Unicorn is a fabulous animal which never had any existence in reality. It is however unlikely that it was entirely a figment of man's imagination : it is more probable that a living prototype gave some foundation to the reports spread abroad about it by early travellers or by merchants engaged in foreign trade. Misunderstandings of their story, inaccuracies in reporting it, and that very human failing—exaggeration, did the rest.

Our earliest occidental authority on the Unicorn is the *Indica* of Ctesias (early 4th century B.C.) in its existing abridgment by Photius. We may pass over the three references in the Authorised Version of the Old Testament, in Numbers, Deuteronomy, and Job respectively, because the Hebrew word *Reem* translated *monoceros* in the Septuagint and *unicornis* in the Vulgate appears to refer to some large species of wild ox, and is so translated in the Revised Version. In all probability it was the Aurochs, the *urus* of Caesar and *Bos primigenius* of scientists, whose nearest surviving descendant is the Spanish fighting bull (4).

Ctesias has an indifferent reputation for veracity. Aristotle was to find the monstrous Indian fables of the *Indica* rather more than ' steep ' ; and modern research among the cuneiform inscriptions shows pretty clearly that Ctesias the physician, in his History of Persia, the *Persica*, or rather in what little we have left of it, ' doctored ' his facts of set purpose and probably with malicious intent. Herodotus has been called the Father of History ; Ctesias may aptly be called the Father of Historical Fiction.

The statement of Ctesias, therefore, that white wild asses were to be found in India, which had great fleetness of foot and on their foreheads a single horn, red, white and black in colour, and over two foot long, must be taken with a grain of salt. His further statement that drinking cups made from these horns had the faculty of neutralizing poisons is equally fallacious ; although popular belief in it, more particularly when it referred to rhinoceros-horn cups, lingered as late as the 17th century. It required an experiment by the infant Royal Society of Charles II's reign finally to prevent wrong (5).

There are several local races of the Wild Ass (*Equus onager*) in the Near East. Their range extends from Asia Minor through Syria and Mesopotamia and thence by way of Afghanistan and Baluchistan to the northwest plains of India. Ctesias, during his long

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[4] Many fighting bulls today show the typical aurochs coloration—black with a pale or white streak along the back.

[5] The horn or rather tusk of the narwhal (*monodon monoceros*) was at one time offered for sale by unscrupulous dealers as the horn of a unicorn. As an instrument of magic it fetched enormous prices in the Middle Ages and later. The tusk is straight, hollow, of fine ivory, and has a spiral twist. The narwhal can have no connexion with the birth of the unicorn legend. It is exclusively an inhabitant of Arctic seas which were entirely unknown until a much later date.

residence in the Persia of his day, must have been as familiar with the Onager as every Englishman today—sportsman or not—is familiar with fox and pheasant. Hunting the wild ass was a favourite Persian sport.

The general colour of the Onager's upper surface is reddish dun or fawn, the under parts white or whitish : and this description holds good for every local race ; all of which, needless to say, are in common with the whole equine family, hornless. (PLATE I, FIG. 1). No species of white wild asses exists. An occasional albino is a possibility but, I imagine, would be as rare as a white elephant in Siam. On the face of it, it looks as though Ctesias had somehow heard of some swift agile animal in India, described as not unlike the Onager (what that animal may have been we will deal with later), and at the same time had heard more vaguely of the ponderous Indian single-horned rhinoceros (PLATE I, FIG. 2). In the *Indica* he confuses the two together and adds to the mixture a flavouring of that mendacity for which he was rarely at a loss. The Indian rhinoceros, though nowadays confined to the vast grass-jungles of India bordering on Nepaul and Assam and to districts further south, once extended its range as far west as Peshawur in the Punjab. There is then no unlikelihood of Ctesias hearing vague talk of it. Had he been at all familiar with its huge amorphous bulk he could hardly have credited it with speed. But if—to be fair—the Indian variety in any way resembles its African relative, it is probably speedier than it looks. I know from experience that the so-called black rhino of Africa when molested can be almost as nimble as a cat (6).

We must turn now to our second authority on unicorns—Aristotle, who was writing some half-century later than Ctesias, and commanded, owing to the patronage of Alexander, unrivalled opportunities for research. It is perhaps for that very reason—the unicorn being wholly imaginary—that he tells us little new. We know that he read the works of Ctesias, and, concerning unicorns, we may say in ' poker ' parlance that he ' sees Ctesias and raises him one '. Instead of a single species of one-horned animals Aristotle mentions two—the ' so-called ' wild ass and the oryx. The first is probably a grudging echo of Ctesias ; the second conducts us further south and introduces us to what zoologists of today entitle the *Ethiopian region*, which includes Arabia and all Africa south of the Tropic of Cancer. It is in this region that the genus ORYX, of which there are several species, is found. How the oryx acquired its one-horned reputation is puzzling. Perhaps it was a misinterpretation of its name, which means ' pickaxe ' ; or perhaps it was a misunderstanding by Aristotle's informants of the not infrequent drawings of this beast in strict profile upon ancient Egyptian monuments. It may have been the result of mere accident. The oryx, in its season, is a truculent and quarrelsome antelope, liable to lose a horn in pitched battle with a rival, and I have met with more than one in this condition.

On consulting an old diary, I find that, during my last hunting trip to East Africa (1922), the first oryx (*beisa*) I came across had only one horn. It was in company with a Grant's gazelle (*brightii*) and had for background Kenya's snowy peak. Had I possessed the ready credulity of the Ancients and their total lack of handy reference books, I might thereupon have come home with the tale of a one-horned antelope in Africa ; and had I been able to tell my story to Aristotle (exciting thought !) he would have greeted my one-horned oryx with far less incredulity than my story of a snow-capped mountain

[6] As a coincidence but no more, I might mention that in 1906 my old friend Abel Chapman, the hunter naturalist, shot at Elementeita, Kenya Colony, a bull rhino which, in addition to the normal two nasal horns, had a third small rudimentary horn on its forehead above the eyes. Its head is now in the Hancock museum, Newcastle-on-Tyne.

PLATE I

FIG. 1. INDIAN WILD ASS (*EQUUS ONAGER INDICUS*)

FIG. 2. INDIAN RHINOCEROS (*RHINOCEROS UNICORNIS*)

FIG. 3. BEATRIX ORYX (*ORYX LEUCORYX*)

FIG. 4. SUDANESE SABRE-HORNED ORYX (*ORYX ALGAZEL*)

facing p. 196

FIG. 5. ORIENTAL UNICORN, COPIED FROM THE KOZANJI CARTOONS
(Japanese, 12th century)

FIG. 6. NILGAU (*BOSELEPHAS TRAGOCAMELUS*)

VERTICAL WATER-MILL, NEAR SALONIKA. (*See* pp. 211–12)
Ph. B. Hutchinson, 1917

DISUSED MILL-WHEEL AND MILL-STONE. (*See* pp. 211–12)
Ph. B. Hutchinson, 1917

amid Ethiopia's burning wastes (7). Herodotus, most level-headed of early Historians, knows nothing of the oryx having only one horn ; although he lists it among his African animals in book IV chap. 192 of his History. Had such a story been current in his day, who can imagine him—of all people !—failing to make use of it.

It would be as well to note here that the northern part of the Ethiopian region contains two species of oryx, both of them nearly white. They are respectively the Beatrix oryx (*oryx leucoryx*) (PLATE I, FIG. 4) of Arabia, which is small and dingy white in colour with brown legs, tail-tuft and face-markings, and whose horns are nearly straight and nearly parallel. In old days it probably ranged as far north as Mesopotamia. The other is the larger sabre-horned oryx of the Sudan (*oryx algazel*) (PLATE I, FIG. 3). which is for the most part white with a rufous tinge in places and with a broad conspicuous patch of chestnut on the neck. Its horns are very long, strongly curved, slightly divergent, and rarely quite symmetrical. This latter species, which once ranged as far north as Egypt, is the one which in all probability is depicted on the old Egyptian monuments, though it is not always possible to identify it with certainty.

Coming now to Pliny's *Natural History*—that inexhaustible mine of zoological inexactitudes—we may say, in continuation of our ' poker ' simile, that Pliny ' sees Aristotle and goes him one better '. Pliny tells us that there were no less than three one-horned animals—the Indian ass, the Ethiopian oryx, and an Indian ox. The first two he undoubtedly owed to Aristotle, whom he often follows slavishly : the third, it would seem, he scores off his own bat. How he got hold of its existence it is difficult to guess. There is here no question of his confusing it with the rhinoceros. He knows all about the latter ; records its first appearance in the Roman circus under the auspices of Pompey the Great ; and speaks of it by its name, which, to a Greek scholar, implies that it was horned, not on its forehead, but on its nose. Had he consulted the *Geographica* of Strabo (who died about the time Pliny was born) he would have found in Book XV the mention of ' single-horned horses in India with stag-like heads ' ; and instead of three unicorned animals he would doubtless have given us four. I am inclined to think that this note in Strabo—to which I must return later—gets us a little nearer to the prototype of the unicorn than any other mention of the animal which we have so far examined. It also closes our list of all the essential records of the unicorn in early occidental writers with the exception of a comment by the much later Aelian (early 3rd century A.D.) on the unicorn of Ctesias (8).

Slight as these records are, and all that later students had to rely on, they were enough. The lightest word of Aristotle or Pliny was to medieval schoolmen incontrovertible truth. In consequence the existence of the unicorn became a fixed belief. The only trouble was that, when India and, in a lesser degree, Africa, got better known, and no unicorn materialized in either, some adjustment became necessary. Legends are, as I have said, remarkably mobile. Students of zoology, rather than impugn the veracity of Aristotle and Pliny (which would almost amount to sacrilege), shifted the unicorn's habitat from both India and Africa and located it in Arabia—then as now an almost inaccessible territory into which no investigator was likely to pry. In that locality, therefore, from the Middle Ages onwards, the unicorn ' stayed put ', having

[7] Even so late as the mid-19th century geographers hesitated a long while before accepting the reports by missionaries of permanent snow on Kenya and Kilimanjaro.

[8] Aelian gives *Carcazonon* as one of the unicorn's names, a word possibly connected with *Carcadan* which according to the Revd. W. Haughton was an Arabic name for the rhinoceros. The current Arabic name for the rhinoceros in the Sudan is *Khartit* or *Abu garn* : the Swahili *Faru* or *Kifaru*.

for a companion, perched ' upon the sole Arabian tree ', the equally mythological Phoenix, whose legend was probably also Indian in origin (9).

Meanwhile belief in the unicorn was sufficiently general to introduce it into Heraldry. Sometime late in the 15th century it appears as ' supporter ' to the arms of James III, fifth Scottish King of the Stuart dynasty, and thence was imported into England by James VI and I of the United Kingdom, where it still figures as the left-hand or, in the heraldic sense only, ' sinister ' supporter of the Royal Arms. Heralds, be it noted, following Ctesias, adopted white as the ' proper ' colour of unicorns. They gave it, too, a Narwhal's tusk for horn.

When, only just the other day, a few intrepid travellers penetrated into the heart of Arabia, one of them, whose name has unfortunately slipped my memory, while speaking of the white or Beatrix oryx (*o. leucoryx*) of that country, mentioned in his book the probability that this beast might be the unicorn's prototype. His remark started a correspondence in The TIMES which, like most of its kind, talked round the subject rather than enlightened it. The writers knew all about the ancient references to the unicorn we have discussed above (10) : but these references when closely analyzed do not, after all, amount to a great deal. The very small residue of fact concealed within them is little more than this :—There was, some years before Ctesias wrote, and probably in India—India being common to all the reports—a story, or stories, current of some unknown animal of active nature with a single horn on its forehead—which animal probably bore a reasonably close resemblance to members of both the horse and antelope families.

One and all the letters printed in THE TIMES ignored the fact that the ancient occidental writers they quoted are by no means the only ancient authorities on the unicorn we have. India has more than one border, and any story or legend originated within them is just as liable to travel East as West. One reason for thinking that the unicorn legend originated in India and not in Arabia is that logically speaking India, because of its geographical position, seems to be the most likely centre for its distribution. The unicorn legend reached China, either from India or elsewhere, at a comparatively early date ; possibly not very much later than it reached Ctesias in Persia. The *Li Chî* or Book of Rites, one of the five Confucian classics, contains a list of the four Supernatural Creatures. They are respectively : Fēng, the Phoenix usually known as *Fēng* Huang ; *Kwei*, the Tortoise ; *Lung*, the Dragon ; and *Lin* the Unicorn, usually spoken of as the *Ki Lin* (11). The Dragon in all probability is a creation of the Chinese themselves : attempts to connect it with the Sacred Cobra of India are unconvincing. The other three Supernatural Creatures may well have had an Indian origin. The Phoenix is perhaps a reminiscence of the Argus pheasant with an admixture of the East Indian bird-of-paradise thrown in. The tortoise, which in China has become an emblem of longevity, is in Hindoo legend the emblem of strength. It supports the elephant which

[9] If the fragmentary *Precepts of Chiron* are in truth Hesiod's work the legend of the Phoenix must have ' gone west ' a long time ago.

[10] They probably got them, as I have done, from the *Encyclopaedia Britannica*, ART: unicorn.

[11] At one time dealers in oriential porcelain were very apt to confuse *Ki Lin* (unicorn) with the curly-haired mythical Chinese lion, which is an emblem of royalty, and is called by the Chinese Shi tzu, a name which suggests its title of King of Beasts. The Pekin-palace dogs, now so popular in the west as pets, were deliberately bred to resemble the Shi tzu. The breed dates back to the Sung Dynasty (A.D. 960–1280). In both the characters *Ki* and *Lin* the radical part (reading *Luh*) means a deer, and evidently the Chinese pictured the unicorn as some strange species of cervine.

supports the world. Of the unicorn we can only say that it may be of Indian origin because much the same story of it travelled both east and west at much the same time.

Belief in the four Supernatural Creatures was current in China in pre-Buddhist days. The first Buddhist priests to visit China got too abrupt and discouraging a reception from Shi Huang Ti—self-styled ' First Emperor ' (246–210 B.C.)—to be able to settle there and teach. Ming Ti of Han (A.D. 58–76) gave Buddhism its first real encouragement in China and it was only after his reign that it took serious hold. The compilation of the Confucian Book of Rites (the Li Chi) took place about the 1st century B.C. Buddhism however more or less adopted the four Supernatural Creatures, as it did much else in China, and they all appear as subjects in early Chinese Buddhist art. Traditionally both the phoenix and the unicorn were emblems of a happy reign. They made their appearance only during eras of good government. ' When the unicorn is caught ' the old Chinese saying runs, ' Confucius throws aside his pen '. In art the unicorn is the least popular of the Four : perhaps because so composite an animal was difficult to draw. Its head and maned neck are those of a horse, which as time went on became more and more dragon like. The body and legs are those of a deer or antelope, the hoofs being invariably cloven ; and its long bushy tail was more or less that of an ox. Its traditional colour is blue often dappled with golden or yellow spots, and its hairless throat and stomach—scaled like a snake's belly—are rose-coloured. In art the unicorn is commonly represented in motion through the air with flames flickering about its shoulders. In literature it is described as the noblest of created beings and an emblem of perfect good. It treads so lightly that it leaves no ' spoor ' and so carefully that it crushes no living thing. Western medieval tradition makes no such paragon of the unicorn as this ; although it does assert that its natural ferocity was amenable to the gentle suasion of a virgin.

The earliest datable *drawing* of a unicorn that I can find is not Chinese but Japanese, though doubtless it is based on Chinese designs or descriptions. (PLATE II, FIG. 1). It is to be found in an early and very famous scroll-painting, for many years ascribed to the priest Kakuyu or Toba Sojo (d. 1140), but now more cautiously attributed to some nameless painter of the early 12th century A.D. The scroll (*makimono*) in question contains free and startlingly expressive ink-sketches of both real and imaginary animals, amongst which all the four Supernatural Creatures, except the phoenix, occur (12). It will be seen that the head of the unicorn is here decidedly equine and that its horn is the point of a double-edged sword. There is, I believe, no other parallel in oriental art for this last feature ; the Eastern unicorn's horn being commonly represented rugged, rather crooked, and often branched like a roedeer's antler. In all probability this sword-like horn is a deliberate allusion to the sacred sword of the Japanese regalia which—unlike the later Japanese sword—is straight and double-edged. Its occurrence here gives additional point to the ' Happy Reign ' of which the unicorn is emblem. It suggests too that this drawing, if not by Toba Sojo himself, was, at any rate, due to some painter intimately connected with the Court ; as closely indeed as Toba Sojo, who, being a direct descendant of the emperor Daigo (A.D. 898–931), was a cousin of the reigning emperor.

Had this drawing been in colour, the unicorn's body would have appeared greyish blue and the leopard-like spots yellow or gold. Tradition dies hard in the east. I have in my possession a small drawing of a unicorn with precisely this colour scheme by the 19th century painter Kiosai.

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[12] With reference to PLATE II, FIG. 1 it would be as well to add that in the process of copying much of the fire, brilliance and expression of the original has disappeared.

The Toba Sojo (?) drawing above mentioned is not the most ancient extant *representation* of the unicorn in oriental art. There is a bas-relief of this animal upon a Chinese bronze mirror preserved among the emperor Shomu's treasures in the Shosoin at Nara (13). This Tang-dynasty mirror, which must date before Shomu's death in A.D. 756, depicts the unicorn with a long branched antler of the roedeer type ; and it is interesting to note that this beast shows on flanks and quarters tumour-like spots somewhat reminiscent of those on an Indian Rhinoceros. It has no other characteristic of that animal. One cannot imagine an Indian rhino treading so lightly as to leave no 'spoor'. Upon a second bronze mirror of much the same Tang date—now in the Sumitomo collection (14)—there is another bas-relief of a unicorn, this time with a rider. The horn of this one is of the gazelle type with the slight double curve of Hogarth's 'line of beauty'. There are no doubt other Chinese bronze unicorns of this date or earlier than I have been unable to trace.

Let us now return to Strabo's significant remark that the *Indian* unicorn was a horse-like animal with a stag-like head. Strabo, within the limits of knowledge in his day, has a reputation for being conscientious and painstaking. His note on the unicorn bears evidence of some source other than those available to the earlier authorities, Ctesias and Aristotle. It is no mere repetition of their words. Bearing in mind the general description of the *Oriental* unicorn—its always cloven hoofs and, in particular, its colour, blue—which, being the colour of Vishnu the Preserver and his avatar Krishna, is of all colours the most sacred—can we find in India today any animal which, in broad essentials, will satisfy some at least of the conditions laid down in both Strabo's report and in oriental traditions ?

Consider for a moment the large Indian tragelaphine antelope the Nilgai (*Boselephas tragocamelus*) or, more correctly, since we have here to do chiefly with the male, the Nilgau, which being translated means the blue bull (PLATE II, FIG. 2.) In *Wild Life of the World*, Dr Lydekker says of the Nilgau that 'in general appearance (apart from its horns) it somewhat resembles a horse with an unusually thick neck'. The general colour of the adult male is dark grey, tending to blue ; the much smaller females being brown. Nilgai, which means blue cow, is therefore a misnomer. The horns in both sexes are small for so big a beast and even on the male rarely exceed 9 inches in length. They are nearly straight, grow quite close together, and rise perpendicularly from the skull just behind the eyes. The muzzle is narrow and ox-like (antelopine) and both sexes have a mane (equine) ; the bull having in addition a tuft of long hair on the throat. Now if, in our mind's eye, we coalesce the two insignificant and closely contiguous horns of the Nilgau into one, which is a much easier feat for the imagination to perform than to visualise as one the two long conspicuous rapier-like horns of the oryx, we arrive at a by no means inadequate picture of both Strabo's unicorn and the unicorn of the Far East. Needless to say the resemblance is by no means exact, but, when so illusive and inaccurate a thing as a legend is under consideration, it is perhaps less far off than one would expect. The Nilgau is and always has been common in many parts of India : its sacred blue colour affording it permanent protection, ensuring for it universal respect, and, what is more, a constant place in man's talk. The Nilgau is more a bush- than a forest-dwelling animal, and like all such animals, including the ponderous Elephant, it moves habitually through its customary environment with uncanny silence. It is speedy also, for it is said that even the heavily built bulls can tax the powers of a good horse.

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[13] Otto Kümmel, *Die Kunst Ostasiens*, plate 27.

[14] René Grousset, *Civilisations of the East*, III, fig. 200.

For what it may be worth my own impression is that in the Nilgau, if anywhere, we find the most probable living prototype of the unicorn. Let us here re-examine briefly the claims that the other animals have for assuming this responsibility.

The onager's connexion with the unicorn legend lies chiefly in its value as a descriptive simile for the unicorn's general appearance. The unicorn is described as horse-like and so in many ways is the wild ass. It is of course always hornless like all its kin.

The Indian rhinoceros contributes nothing to the legend except its possession of a single horn. Its huge bulk rules it out from the light-weight class to which the unicorn obviously belongs.

Both these animals however fulfil the necessary condition of being habitants of India.

The only link the Oryx of the Sudan (*algazel*) has with the unicorn derives from the *penchant* all ancient Egyptians had for drawing animals in strict profile, like an architect's

HERALDIC UNICORN

side elevation of a house. In their drawings therefore the oryx naturally appears with only one horn. The same may be said of its nostril and eye—though no one has ever accused it of having only one of each.

The Arabian oryx (*leucoryx*) we may also write off as the unicorn's prototype. The unknown Arabia of ancient days was no more than a convenient dumping ground for stray legends looking for somewhere to happen. At a later date Arabia becomes the spiritual home of tall stories, as the immortal ' Arabian Nights Entertainments ' bear witness. Adorable as both they and their traditional teller are, the agile-witted Scheherazade never for a moment dips her bucket in the Well of Truth.

India too, it must be confessed, deals in the marvellous with an open hand : and she was doing so long before Ctesias gathered material for his *Indica*. But India's marvels are invented mainly in the way of praise to her Gods, not, as in Arabia, for the entertainment of an idle hour. Was it, one wonders, by way of India that Arabia got from China the story of Sindbad's Roc or Rukh—that giant bird which plays its impressive part in the opening chapter of Chuang Tzu's philosophy ? Or was it the other way about ? Like Chuang Tzu's Well-Frog I know too little of the Great Ocean of Oriental legend and tradition to be dogmatic on this matter. All that I do know is that Strabo's unicorn, his horse-like animal with a stag-like head, does in some small degree resemble the nilgau—the Indian blue bull which by reason of its colour was regarded by the

Hindoos as sacred and a marvel, in much the same way as the peacock is. Nor would I put it past these capable romancers to borrow for it, from their rhino, its single horn in order to make it yet more marvellous. Whoever the people were who first described the Gods of India and their miraculous doings could take in their stride so simple an alteration as this.

And if no one else agrees with me that the Nilgau is the unicorn's prototype it is no great matter. Our present investigation is, after all, little more than an entertaining archaeological pastime. In the tracing of a legend to its source complete success is rarely possible. An approximation is the best we can hope for. It seems, for example, more than probable that the ever-triumphant cunning of the small long-eared hare of Africa (*lepus capensis*), which is a feature of many ' Bushmen ' legends, became, a whole world away, through the medium of west African natives exported as slaves to America, Brer Rabbit's more widely known triumphs in the tales of Uncle Remus. But who, lacking the necessary documentary evidence, could ever hope to prove it ? The same applies to the nilgau–unicorn connexion—if any such connexion exists. The supposition that the nilgau is the unicorn's prototype has a claim to our attention chiefly because it is new. But as most students and lovers of antiquity know, Novelty is, in itself, no recommendation or advantage ; unless it gets nearer to the truth than anything that has gone before.

Tripil's'ka Kultura

by V. Gordon Childe

Tripil's'ka Kultura, Tom. I., Akademia Nauk Ukrainian S.S.R., Institut Arkheologiy, Kiev, 1940, pp. 592. 48 rubles (out of print).

EVER since von Stern described his *Prehistoric Greek Culture in South Russia* in German, and Wace and Thompson drew attention to its affinities with prehistoric Thessalian material, the neolithic ' Tripolye ' cultures with painted pottery have attracted archaeologists in the English-speaking West. But even those who took the trouble to learn enough Russian and Polish to read original excavation reports, have been able to make out little of the relation between the several varieties of pottery, and nothing at all of the domestic architecture represented by the mysterious ' ploshchadki ' in which that pottery was found. Attempts had been made at solving the first problem by applying to the whole ' Black Earth ' area results obtained on its edge—at Cucuteni—and conveniently published in German. But such attempts, remaining essentially typological, came to no concordant result. In 1935 Miss Passek set forth in *La Céramique tripolienne* (GAIMK, Moscow-Leningrad) the most satisfying available chronological classification of the material. Though still essentially typological, it does present each successive style as spreading over a wider area than all its precursors and has the further merits of emphasizing local divergences and of recognizing the coexistence in all stages and at most sites, albeit in varying proportions, of different fabrics—monochrome, polychrome, incised, fluted, and striated (I and others had gratuitously taken polychrömy as in itself a mark of antiquity).

The same authoress has begun to solve the architectural problem by five seasons' excavation at Kolomishchina on the Middle Dniepr, conducted in collaboration with E. Krichevskiy—whose death during the siege of Leningrad must rank among the gravest losses sustained by European archaeology through enemy action. The results of the seasons 1934–37 are reported in detail in *Tripil's'ka Kultura*, vol. I, with plans, sections and photographs together with shorter notes on technical questions and on minor excavations at Gorodsko and Bely Kamen and a comprehensive survey of the architecture by E. Krichevskiy. Unfortunately the book is printed on bad paper and, apart from brief Russian and French summaries, the text is in Ukrainian. I may therefore point out that there is a very full Russian summary of Krichevskiy's concluding survey in *Sovietskaya Arkheologiya*, VI, and confess that, finding no Ukrainian dictionary in Scotland, I have had to rely heavily on this version.

The irregularly rectangular areas of burnt clay, termed *ploshchadki*, had been fancifully interpreted by early Russian and Polish excavators as remains of mortuary houses wherein some curious cremation ritual had been practised. Only during the last twenty years did the conviction spread that they were just the ruins of dwellings, but exactly how such were built and how they had turned into *ploshchadki* could not be made out from reports unaccompanied by plans. The confusion was increased by the assumption that all *ploshchadki* represented the same type of building and misguided attempts were made to explain the constructions described along the Dniepr and Dniestr in terms of

the more precise reports of Laszló on the houses at Erösd in Transylvania. Krichevskiy explicitly repudiates this assumption. The type represented at Kolomishchina is itself divisible into three subtypes and is in effect proper to the Middle Dniepr, Middle Bug and Middle Dniestr.

It was already known that *ploshchadki* were often arranged in circles. At Kolomishchina there were in fact two concentric rings with diameters of 50–60 and 170 metres and comprising respectively 8 and 31 dwellings set radially with their long axes directed towards the common centre. All 39 have been excavated so that we have here one of the rare examples of a neolithic settlement totally excavated. However, only 28 are considered in this volume and only nine described in full.

The feature distinctive of the type here represented is that vases, querns and ovens were found *upon* the layer of baked clay. It accordingly represented the *floor* and not the fallen roof or walls. Actually three different kinds of floor could be distinguished, sometimes within the same area and superimposed. In some *ploshchadki* the uppermost layer over part at least of the area consisted of slabs, 2–4 cm. thick, of finely kneaded clay evenly baked all over. Other layers, often resting directly on the subsoil, are composed of thinner slabs, not over 1.5 cm. thick, also composed of fine clay, but baked intensively on the upper side only. Thirdly, usually between the slab layers, may come a layer of ' clods ' of coarse clay comprising much vegetable admixture, that measure on an average 36 by 28 by 12 cm. These are much smoother and better baked on the upper surface where the vegetable matter has been completely burnt out, while below it has been merely charred. The impressions of split timbers, laid horizontally, are observable on the lower sides of these. The authors believe that these floors, save perhaps the uppermost, have been baked by fires specially kindled on their surfaces. In fact Kulskaya and Dubitskaya (as reported in their technical chapter) by kindling bonfires on suitably prepared layers of local clay succeeded in reproducing precisely the phenomena observed on the floors.

Krichevskiy contends that the plurality of layers betokens renewals of the floors. When the original floor became worn or broken, a bed of split timbers would have been laid down over it and these covered with lumps of clay which would then have been baked by lighting fires upon them. How such fires could be lit without igniting the supports for walls and roof is not discussed in the Russian text. But the excavator indicates that the component slabs of the upper layer may have been fired somewhere else, like tiles in fact. In the larger houses the basal floor of thin slabs covers only part of the area over which slabs of the top layer extend. Herein Krichevskiy sees evidence of the enlargement of the dwelling to accommodate a growing number of families. So *ploshchadki* 24 would originally have comprised only two rooms, each containing an oven, corresponding to the area of the primary floor. Subsequently it would have been enlarged by the addition of two more rooms with ovens after the preparation of a secondary floor covering the expanded area. Often, however, the extensions, paved only by slabs of the top layer, contain no ovens or hearths.

In some *ploshchadki* folds of baked clay, rising above the general floor level, denote the bases of walls or partitions. But no indications as to how the roof was supported were obtained till 1938 when the charred stumps of oak posts were observed in two houses. In no. 24 five posts were actually located, and, by extrapolating a sixth that may have been destroyed by Chwojko's trenching last century, the authors obtain two rows of posts, parallel to, and one metre from, the side walls. However, in 1928 at Bely Kamen Makarevich had found a semicircle of post-holes defining one end of a house, measuring 16 m. by 5 m., and two pairs of posts towards the middle of the building's length. This

curvilinear outline of the end corresponds well to what seems to be represented in the well-known models* from Popudinia and Sushkova near Uman on the Bug. One suspects that careful examination of the subsoil should have revealed the sites of other posts at Kolomishchina too. Nor do the excavations here reported quite exclude the possibility that the house floors had been raised above the ground on piles, like the ' granary ' floors at Köln-Lindental—after all the clay models from the Bug basin* do stand on four or six legs.

Of the 28 dwellings whose measurements are given in this volume, ten, measuring as much as 22.6 m. by 5 m. or 17 m. by 8 m., are classed as large, twelve, not exceeding 15 m. in length or 6 m. in width, as medium, and five (7 m. by 4 m. or less) as small—other small houses were found in the inner ring in 1938. The small houses contain as a rule only one oven, a single quern and 10 to 15 vases. Such obviously housed only a single family. Medium and large houses contain 2 to 5 ovens, 4 or 5 querns and 30 or more vases. They are divided into rooms by transverse partitions, and some of these subdivisions, containing querns and ovens, served the same domestic and culinary purposes as the small house itself. But parts, lacking such fitments, are interpreted as porches such as are depicted in the models. In a large house a fifth to a quarter of the whole area was given up to the porch. The small houses presumably accommodated a single natural family, and the disposition of their furniture accords quite well with that indicated in the Uman models. The plurality of ovens and querns and groups of vases (apparently including storage jars) should indicate that the larger houses were occupied by several such families. If Krichevskiy is right in thinking that the larger structures with their multiple floors result from the enlargement of original small houses, it should follow that the enlargement was designed to accommodate the families of married sons who still remained under the parental roof as in the ' great family ' or *zadruga* still found among the Balkan Slavs. At the same time this author elsewhere contends that it was only in the last stage of the Tripolye culture that large multifamilial dwellings gave place to smaller structures confined to a single family and interprets this change as a sign of the break up of the clan organization characteristic of ' primitive communism '. In point of fact Kolomishchina itself belongs to an advanced stage of the culture, III on Passek's classification, although a still later stage is represented at peripheral sites like Usatova, near Odessa.

All the dwellings at Kolomishchina seem indeed to have yielded pottery attributable exclusively to this same stage, equivalent to B in Chwojko's original classification. Now in the same small area of 110 sq. miles just south of Kiev no less that 26 villages of this and the preceding stage have been identified. In *Kratkie Soobshchenniya* VIII Krichevskiy has explained this density of settlement and the absence of *tell*-formation at any excavated site by the predatory nature of Tripolye agriculture requiring periodical shifts of whole settlements as among the Danubians in Central Europe. His inference is still probable, but the shifts cannot have been very frequent since his explanation of the large houses involves their occupation for at least two generations.

The book before us represents the most decisive contribution yet made to the elucidation of the complex problems raised by the first peasant culture that arose on the parklands of southeastern Europe in the New Stone Age. Its maps, plans, sections, tables of measurements, and inventories of relics (the find-spots of which are frequently plotted on the plans) provide solid material for the reconstruction of the life and development

* Illustrated in my *Dawn of European Civilization*, 1939; in *Swiatowit*, XVI (1934–5); and *Tripil's'ka Kultura na Ukraini*, Kiev, 1926.

of the peasant societies whose concrete remains it describes. Its production is a fitting memorial to Ukrainian science as it was on the eve of the Nazi invasion. But it is confessedly only an instalment. The results of the 1938 campaign and fuller reports on cereals and animal bones are promised in volume II. And since 1938 the expedition led by Passek transferred its activities to Vladirovka in the Bug basin—a larger settlement comprising five rings of *ploshchadki* and in addition half-subterranean dwellings (*zemlianki*) and yielding pottery of phase II. Much of the material discovered must have been dispersed by the invaders. But Passek has rescued photographs, plans, drawings and reconstructions that served as the basis for a very instructive short report presented to I.I.M.K. during the Jubilee Session of the Academy of Sciences in June. We may therefore look forward to volume II—let us hope on better paper—with confident expectation of further enlightenment. Its publication will form a fitting memorial to the restoration of science in the Ukraine after the defeat of Hitlerism. That restoration will certainly be accelerated and consolidated by the policy of popularizing scientific results that is consistently followed throughout the Soviet Union and can relevantly be illustrated in the present context. In addition to the book just reviewed the Ukrainian Academy of Sciences has also published a cheap, 84-page booklet by the same authoress and under the same title, also in Ukrainian and printed in Lvov in 1941. It gives an admirable survey of the economy, architecture, art and religion of the Tripolye culture as revealed by all excavations both within and beyond the Union's frontiers, set out in popular and readable style with 45 excellent illustrations, two chronological tables and a substantial bibliography. Incidentally it gives some fresh details about domestic stock not included in the larger and earlier work. The Royal Society or the Society of Antiquaries do not need to undertake the publication of such ' works of vulgarization '. They would do well to encourage their Fellows to write such and not leave the task to less competent pens.

Corpus Inscriptionum Insularum Celticarum

by O. G. S. Crawford

Corpus Inscriptionum Insularum Celticarum. *By* R. A. S. Macalister. Vol. I. Dublin, Stationery Office, 2945 [To be purchased directly from the Government publications sale office, 3-4 College Street, Dublin, C.5, price £2 2*s*].

THE Irish Manuscripts Commission is to be congratulated on publishing this Corpus which contains between two covers the bulk of the non-Roman inscriptions of the British Isles. Unfortunately the 'Pictish' inscriptions of Scotland 'although for the greater part in the Ogham character, are . . . omitted', but they are to be found in the author's contribution to Professor Macneill's *Festschrift* (Féilsgribinn Eoin mhic Néill, Dublin, 1940, 184–226). Presumably they are omitted because regarded as non-Celtic, an opinion held also by the late Sir John Rhys. But it would have been better to state that this *is* an opinion; the language, and even the decipherment, of these inscriptions is still disputed, so far as the dwindling group of Celtic scholars allows, and would doubtless continue to be so even if two only were left in the ring. The present reviewer is not qualified to enter the lists, or even to review this present work; and he does so only because of the difficulty he has had in previous cases of extracting contributions within a reasonable time from any of the few persons who are so qualified. The omission of these 'Pictish' Oghams is, however, a serious inconvenience in a book described as a Corpus, and one not to be got over by an ingenious manipulation of the title. Incidentally we do not understand the reference on p. 1 to the 'formula adopted for the sub-title', for there is no sub-title, and the statement seems intended to explain the title itself.

But these are criticisms of form, and they do not affect the value of the work itself. Only those who have tramped the country themselves in all weathers, as the author of this book has, can realize how much hard labour is condensed here. It is no exaggeration to say that each item recorded and visited represents at least one hard day's work in the open, in a climate where few days are without rain, to say nothing of the subsequent work in the study. For this all students will be permanently indebted to Professor Macalister. This is a really learned and useful book, and the reading of it is lightened by the whimsical touches that are always to be found in the author's writings. It is a serious contribution by an eminent man to a subject that has in the past attracted more cranks than scholars.

The bulk of the Ogham inscriptions are found in Southern Ireland, where undoubtedly they originated. Of 316 in Ireland 249 (78 per cent) are in the counties of Kerry (121), Cork (81), and Waterford (47). In South Britain they are confined to Wales, Cornwall and Devon, with the single exception of the remarkable specimen found at Silchester. There are a few in the Isle of Man. The only normal Scottish Ogham here recorded is that from the island of Gigha; the others (omitted) are all in the north-east. All Oghams are satisfactorily explained as tomb-stones and there seems no need to assume any other purpose for them.

But the Corpus rightly includes many inscriptions in Roman and derived Roman lettering. There are two in Ireland which, on epigraphic grounds, have some claims to be regarded as early, one (no. 19) from Co. Kildare, and the other (no. 314) in Co. Donegal. The former is bilingual, and a letter, slightly damaged, like an inverted V is explained as a G derived from the Greek alphabet. I have not seen the original, and as the upper part of the letter is gone interpretation must be hazardous; but from the transcription here given I should have thought that it was an R, which would make the whole read IVVERE DRVVIDES (1).

There is no reference to the Wareham stones which Professor Macalister himself has published. Are we to get these in a subsequent volume? Surely, however, they come within the scope of the present one.

So far as the present writer has been able to compare Professor Macalister's transcriptions with his own first-hand experience (and that is unfortunately not far), he would offer the following remarks. The reading of the Cat-stone (no. 510) is incorrect, the last word being quite certainly VICTR, not VICTI (see PLATE facing (2). This presumably is an abbreviation for some such name as VICTRICIS. The Greenloaning stone is suspect and the lettering which I saw was, in my opinion, quite certainly modern, or at best the modern recutting of an ancient inscription—but I saw no underlying trace of older letters. The slab has a large smooth surface of just such a nature as to invite the forger to use it, and some of the existing letters are plainly modern graffiti.

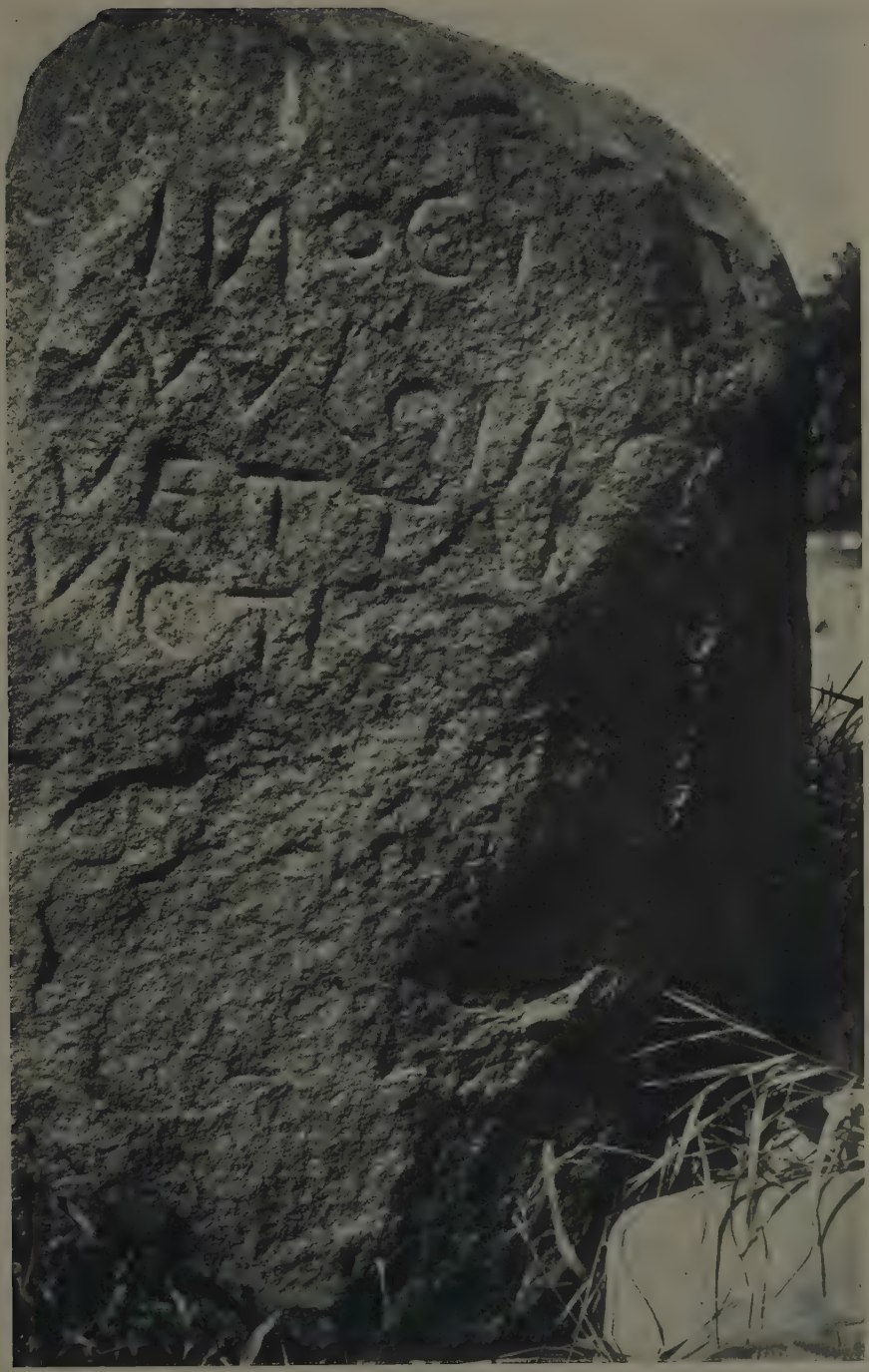
The last inscription (no. 520), at Whithorn, is early and important. I read the last word as BARROVEDI or BARROVIDI, but noted that I thought BARROVADI to be impossible. It must be admitted that the photograph in *Proc. Soc. Ant. Scot.*, vol. LXX, 321, might seem to favour A; but it will be noted that the left-hand stroke of the letter is vertical, not sloping as it should be if it represented an A. For the rest Professor Macalister has been able to see more than I could, using a torch at night, and there seems to be no reason to doubt the correctness of his interpretation.

[1] Professor Macalister states that 'the only possible explanation is that it is a G, derived not from the Roman but from the Greek alphabet', the writer having 'inherited his knowledge of the Latin alphabet from some people, whoever they may have been, who had taken over the script before the Romans had differentiated the signs C, G'. That is considered by some authorities to have taken place in the fourth century before Christ. But what people in Europe had then done this? And, even so, Ireland is a long way from Europe. If these things did happen, there would surely be some other evidence besides a single letter in a single inscription—and a mutilated letter at that! The stone on which this inscription is cut is now in the Dublin Museum, and it should be re-examined.

The Donegal inscription was not seen by Professor Macalister whose interpretation is based upon a squeeze. Another inscription on the island (in Lough Derg) is dated 1551, and although the lettering here reproduced (p. 302) certainly looks good and early, one cannot help wondering whether it really is. Some of the lettering on early 17th century tombstones in English churchyards is not unlike this. It is attributed to the pre-Christian period, and explained as recording the visit of two persons (Ornecnus et Elisa) to the island 'for the purpose of obtaining an oracular vision'.

I have dealt rather fully with these two inscriptions because they would be important if their age and authenticity could be firmly established. Unfortunately that has not yet been done. A couple of really good photographs taken in the right light (a side light of course) would go a long way to decide matters. Surely some one could do this and publish the results? Until then one has not the means of forming a sound positive opinion.

[2] The right-hand part of the R is plainly visible on both the original and on the cast in the Edinburgh Museum. It is also quite clear on the original photograph from which this plate was reproduced.



THE CATSTONE, KIRKLISTON, NEAR EDINBURGH
Ph. O. G. S. Crawford

facing p. 208

The author's reading of the ' Apostle Peter ' stone, also at Whithorn, is the same as mine—or better—and I fully agree that the stroke on the right of the monogram is not a letter. His interpretation and conclusion are both important if they come to be accepted ; for it follows that the Chi-rho monogram here at Whithorn cannot be dated before the latter part of the 7th century. The lettering with its serifs compares with similar lettering on early Anglo-Saxon inscriptions (*e.g.* headstones) of about the same date.

The memorial stones of the south-western peninsula are of particular interest, for some of them (and all the Oghams) are evidence of Irish influence. Thus, two from Devon have inscriptions in debased Roman letters with *mac-* for the more common *filius* (no. 489, near Ivybridge, Maqui : no. 492, near Tavistock : Macco). This Goidelic form is of course normal in Ireland, and also in the north-east of Scotland. The few Devon stones occur round the margin of Dartmoor ; there are several from near Tavistock, some unfortunately without any precise location. This is interesting because not far away is Callington, identified with Kelliwic of Arthurian associations (see ANTIQUITY, XIX, 156–7). The geographical distribution suggests that the Goidelic influence may have come not direct from Ireland but from the Irish settlers in south-west Wales. There is evidence from the lives of the saints of both direct and indirect intercourse with Ireland. A good article could be written on this subject, based upon the combined evidence of hagiography, memorial stones and place-names, together with such few scraps of direct statement such as the well-known outburst in Cormac's glossary (Kenney, *Sources for the Early History of Ireland*, p. 149) ; together with the evidence of prehistoric habitation-sites (e.g. earth-houses) (3).

This Corpus is a valuable contribution to knowledge and will, we hope, form the basis of many studies of Dark Age history. We shall look forward eagerly to the next volume.

[3] It is interesting to note that Cormac mentions a Goidel fort presumably in Britain, though the language is obscure, as having a triple fosse. Such forts occur in Cornwall, though two fosses only are more usual. The one mentioned is given two names DIND TRADUI and DUN TREDUI and is assigned to Crimthann the Great, ' King of Ireland, and Britain as far as the English Channel '. His date is usually given as A.D. 366–79.

Notes and News

ARCHAEOLOGICAL JOURNALISM IN THE 17TH CENTURY

In Aubrey's *Monumenta Britannica* MS in the Bodleian (MS. Gen. Top., c. 25), in the section dealing with ' Roman Pavements and Opus Tessellatum ', is inserted a printed broadsheet of a single leaf published in London in 1685 entitled ' A Strange and Wonderful DISCOVERY newly made of Houses Under Ground, at *Colton's-Field* in *Gloucestershire* '. This production is an entertaining and particularly shameless piece of journalistic fabrication round the nucleus of a not very exciting find of Roman coins and pottery, and describes how workmen in a gravel-pit two miles from Cirencester ' discovered an Entrance into the Belly of the Hill ' at the foot of which they were digging, ' rather the work of Art than Nature ', and exploring this with a lantern found a large hall with long tables and benches (which of course crumbled to dust); then a kitchen and a parlour ' furnish'd according to the fashion of those Times ' (but which times is unspecified), and another room ' curiously beautified with Carved Work, supposed to have been some place of Worship and Devotion ' and containing urns with ashes, and Roman coins. Nor did the wonders cease here—indeed they had hardly begun, for in breaking open an iron-bound door the workmen were astonished to see ' the Image of Man in full proportion with a Truncheon in his hand, and a light in a glass like a lamp burning before him '. Thinking however that if this was not the Devil it might be the guardian spirit of treasure, they went in, whereat the figure struck at them and they fled, carrying off only some of the Roman coins, to ' a gentleman who is a famous Antiquary '. He, next morning, accompanied them to the place, which he viewed (as might be imagined) ' with wonder and delight ' and ' without any Apprehension of Danger went in ' to the room containing the figure, which at his third step smashed the burning lamp, leaving them in darkness save for their lantern. ' A hollow Noise like a deep Sigh or Groan ' deterred them from further search, ' our Adventurers hastily quitting those dark Apartments, which they had no sooner done than the Hill sunk down and buried all the Rarities ' except the coins rescued by the workmen, which were afterwards sold ' at great Rates ' to ' Curious and Ingenious Persons '.

Here then is a highly circumstantial account of a discovery which can only be called sensational, with details of the precise locality and even, thanks to a note of Aubrey's written at the foot of the broadsheet, the name of the antiquary who visited the site, which (I transcribe it with mixed feelings) was that of Mr Thomas Pigot, a Fellow of Wadham, who had given Aubrey other, and one hopes more reliable, information about Roman remains in Gloucestershire. Yet apart from the prosaic elements of a find of Roman pots and coins and perhaps some sort of built structure in what may have been a barrow, the whole of the story is a conflation of well-known folk-tales which go back to early medieval times and have been written up to form a piece of sensational journalism.

Basically, the story belongs to the group of tales Sir E. K. Chambers has called the ' Hollow Hill ' legends (1), which from the early 13th century at least were often centred on Arthur, as on other ancient heroes such as Frederick Barbarossa, in which the champion sleeps in an underground hall awaiting his recall to earth. This in its turn seems related to the early Norse stories of dwellers in barrows and hills whose realms are entered from time to time by the saga heroes and have been discussed recently by Miss

[1] *Arthur of Britain*, pp. 221 ff.

Ellis (2) : in *Beowulf* the treasure-hall of the dead beneath the howe is explicitly described in terms which can only relate to a megalithic chambered tomb, and it seems likely that the Norse beliefs centred on halls beneath howes in which many heroes sit awaiting battle (which, as Miss Ellis has shown, contribute largely to the concept of Valhalla) may go back to aetiological myths invented to explain the phenomena encountered when breaking into chambered tombs, with their collective burials ranged around the stone-built vault.

A version of the story appears in the early 12th century in William of Malmesbury, associated with Pope Sylvester II and the treasure beneath the Campus Martius (3). Here a king and a queen sit feasting in the underground hall by the light of a carbuncle in the ceiling which is broken and extinguished as Sylvester's companion touches a finely-wrought knife, and the two escape by lantern light as the darkness echoes with groans—circumstances suspiciously reminiscent of Mr Pigot and the workmen at Colton's Field. The earliest Arthurian association of the story seems to be Gervase of Tilbury a century later (4), William of Newburgh (5) relates a similar legend about a barrow in Yorkshire and the folk tale continued in various forms to the present day (6). The still-burning lamp appears as we have seen as a part of the legend in the 12th century, but by Aubrey's time may well have been influenced by the Renaissance story, usually attributed to the time of Pope Paul III (1534–49) of the finding of Tullia's tomb on the Appian Way with a lamp still alight—a legend which did not escape Sir Thomas Browne's curious attention (7) and which gave rise to Donne's magic lines—

Now as in Tullia's tombe, one lampe burnt cleare
Unchang'd for fifteene hundred yeare—

in his *Epithalamions* of 1613.

The 1685 broadsheet is therefore an ingenious utilization of folk-lore largely, one suspects, to advertise the sale of the coins ' at great Rates '. The original discovery presumably did include Roman pottery and coins and may have had some background of truth in the accidental finding of a chamber in a Cotswold long cairn, or one of those curious ' Shepherd's Cots ' of corbelled masonry first described by Lysons from Ablington and commented on by Mrs E. M. Clifford (8). The precise part taken in the whole not very edifying affair by the learned Fellow of Wadham is perhaps better left obscure.

STUART PIGGOTT.

The text is printed in full in Rudder's *History of Cirencester*, 1800, pp. 71–4, and in part in Beecham's *History of Cirencester*, 1886, pp. 276–7. R.A.

A VERTICAL WATER-MILL NEAR SALONIKA (*see* PLATES III–IV)

In a recent article in ANTIQUITY on ' The Problem of Early Water-mills ' I gave reasons for thinking that the water-mill known to the epigrammist Antipater of Thessalonika in the first century B.C. must have been a vertical mill, that is, one in which a

[2] *The Road to Hel*, esp. pp. 90 ff., 191 ff.

[3] *Gesta Regum Anglorum* (Rolls Series), II, 167.

[4] Chambers *loc. cit.*

[5] *De Quibusdam Prodigiosis*, I, 28, quoted by Thurnam in *Arch.* LXIII, p. 522.

[6] Cf. for instance Grinsell in *Folklore* XLVIII (1937), 245.

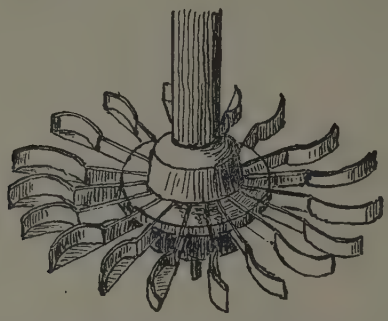
[7] *Vulgar Errors*, III, 21, where another legend of a lighted lamp in the tomb of Olibius near Padua is cited.

[8] *Proc. Prehist. Soc.* IV (1938), 214.

horizontal water-wheel fixed to the lower end of a vertical shaft turned the mill-stone without the intervention of any gear-wheels (1). I also reproduced a diagram of such a vertical mill seen by Castellan at Lampsaki, near the Dardanelles, in 1808.

Now, through the kindness of Mr B. Hutchinson of Worthing, I am able to reproduce a photograph of such a mill taken by him at a place about 15 miles from Salonika—the ancient Thessalonika—in 1917. In all its details this mill closely resembles that illustrated by Castellan at Lampsaki, except that the wheel turns clockwise instead of anti-clockwise.

Above the roof of the mill can be seen the top of the large flume that conveys the water from the elevated mill-stream and directs it on to the blades of the mill-wheel underneath the floor of the mill. This flume is made of staves like a barrel, and is nearly cylindrical, but at its lower end tapers to a relatively small opening.



WHEEL OF VERTICAL MILL FROM THE BOG OF MOYCRAIG, CO. ANTRIM, IRELAND
after Robert MacAdam

Outside the door of the building can be seen a disused mill-stone composed of many pieces of stone bound together with an iron band. Beside it is also a disused mill-wheel consisting of a large number of scoops or ladles radiating from the central nave. This is specially interesting on account of the remarkable similarity it bears to an ancient Irish specimen discovered in the Bog of Moycraig, near Ballymoney, co. Antrim (2), a drawing of which is given here for comparison. This detail adds confirmation to the conclusion already reached, that the vertical mill reached Ireland from the Mediterranean.

Since writing the above I have come across a drawing of a mill-wheel of the same type, forming part of a vertical mill in the Isle of Mull. This, by D. Roberts, R.A., is to be seen in A. and C. Black's illustrated edition of the Waverley Novels, 1879, vol. 24, ' The Pirate ', p. 208. This mill differs from the usual vertical mill in that the vertical shaft is geared to the spindle—a peculiarity I have not seen elsewhere. It is the most northerly example of what may perhaps be called the Mediterranean type of wheel, consisting of ' ladles ' ; from the Hebrides to Norway the wheels consist simply of more or less flat boards or vanes radiating from the shaft, like those illustrated in my former article.

E. Cecil Curwen.

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[1] Antiquity, 1944, xviii, 134.

[2] *Ulster Journ. Archaeology*, 1856, iv, 6.

IRON IN THE MEROITIC AGES

Attention is drawn to an important paper by G. A. Wainwright entitled ' Iron in the Napatan and Meroitic Ages ' which has recently appeared in *Sudan Notes and Records*, part I of vol. 26. Most readers of ANTIQUITY are acquainted with Mr Wainwright's paper, ' The Coming of Iron ' (ANTIQUITY, X, pp. 1–24). His present study examines in detail the evidence so far known for the coming of iron to the upper valley of the Nile and the territory now known as the Anglo-Egyptian Sudan, and shows how at a comparatively early date its knowledge of the working of iron spread from Egypt up the Nile. Thus it was ready to spread further still in due time into negro Africa. Mr Wainwright is engaged on yet other studies of all existing evidence as to the diffusion of the knowledge of iron-working in central Africa; and all those who have the opportunity to record detailed accounts of native methods of iron-working, or traditions connected with it, should do so now, before they are lost for ever.

As to the Napatan Age—when the capital of the Egyptianized kingdom of Ethiopia had its capital at Napata near Jebel Barkal on the Dongola reach of the Nile—Mr Wainwright finds no evidence for there being any iron in Ethiopia ' during her great days ', when up to 663 B.C. her kings ruled Egypt as the 25th Dynasty, but he gives reasons for thinking that the knowledge of ready-made iron objects was spread in Ethopia by Ionian and Carian mercenaries during their prolonged occupation of Nubia, though he finds no evidence that they introduced the knowledge of how to smelt iron from the ore. These mercenaries first entered the country with Psametik II (593–588 B.C.) and were probably there until about 450 B.C. The knowledge of iron was thus brought to Ethiopia by the very people who had shortly before introduced its use into Egypt. Coming from south-western Asia Minor they must have been much the same people as the Philistines who had brought it to Palestine in an earlier age, and as the elephant-hunters who introduced it to the Red Sea coasts in Ptolemaic days, and the ' Greeks ' who imported ready-made iron to these coasts in the first century A.D. Mr Wainwright draws attention to the important observation of Herodotus that the Ethiopians in Xerxes' army had arrows tipped not with iron but with the stone from which seals are carved (presumably carnelian) and spears with horn points, as indicating that to all practical purposes the Ethiopians were still without iron in 480 B.C.; while he notes that iron does not appear in the foundation deposits of the pyramids at Napata until nearly a century later.

Mr Wainwright then examines the evidence for the existence of iron in the Meroitic Age, when the capital of the Ethiopian kingdom moved southwards to Meroe, where it remained until the fall of the kingdom in the fourth century A.D.; and he finds there proof of the smelting of iron on a considerable scale some time before the foundation of the Lion Temple, which was built on a mound covered with iron slag from some earlier period. The foundation of the temple he dates to the first century B.C. on the evidence of a stele found in the ruins of the Temple.

He points out that the products of the vast Meroitic iron industry are not found in the private graves of the period, as far as they have been excavated and published; and draws attention to the surprising fact that iron arrowheads, which do not begin until the first century A.D., appear to cease after the third century A.D., and are very rare in the subsequent X-group period, although numerous archer's looses, etc., bear witness to the continued use of the bow, and this same X-group period (*c.* A.D. 300–600) proves to have been in the full Iron Age.

This paper is of great importance to Sudan archaeology and indeed to African prehistory, and Mr Wainwright has done a great service in collecting all the evidence that has so far been published. His careful compilation of references will be invaluable to

future investigators in this field. He however reminds us of the unfortunate fact that the cemeteries at Meroe and Napata, which were excavated long ago by Professor Garstang and the late Dr Reisner, have not yet been published. When this is done it is not unlikely that some of his conclusions may have to be modified; for he would be the first to admit that negative evidence, on which he has been forced in places *faute de mieux* to rely, is unreliable.

Evidence may be found of the existence of iron objects in Ethiopia during the 25th Dynasty. Reisner's diary of his as yet unpublished excavation of the Western Cemetery at Meroe records his discovery of a grave (w 619) which contained two iron spearheads and a plaque of Shabataka, with whose reign they may be contemporary.

The smelting of iron at Meroe on a large scale may not be as early as the first century B.C. The stele found in the ruins of the Lion Temple, on which that date is based, may have been moved from some other building in which it was originally erected.

Subsequent excavation of X-group sites may establish that iron arrowheads did not die out in Meroitic times, as at present seems to have happened, but may have continued in use during the later period.

With regard to the statement in one of my letters to him, which Mr Wainwright quotes: 'there is no trace of the continuation of iron-working at Meroe after A.D. 350—in fact there seems to be no sign of occupation of that site after that date (except at the Kenisa to the north)', I should like to take this opportunity of saying that, while this again is negative evidence, it does not take into account the graves found by Professor Garstang, which, as Mr Crowfoot pointed out long ago in *Sudan Notes and Records*, are not of the early date attributed to them by Professor Garstang, but from their re-use of Meroitic offering tables as grave blocks may well be post-Meroitic in date.

Mr Wainwright associates with the iron slag-heaps of Meroe the heaps of fragments of small conical pots at Kerma, Argo, Kana and J. Barkal; but, although these are thought by some writers to have been crucibles, they would not in that case, as Mr Wainwright recognizes, be connected with iron-working; and indeed in my opinion associated as they all are with temples, they will I believe probably be proved one day to have been holders for bread offerings prepared on the temple premises under conditions of purity thought to be acceptable to the deities, and so brought by the faithful to the profit of the priests.

It is not improbable that, when iron-working was first established at Meroe, it was a royal monopoly and was wrapped in the secrecy which necessarily conceals for as long as possible the manufacture of any new weapons of war. Indeed it may one day be established that the traditions of the danger and uncleanness attached to the working of iron still so widespread in Africa have their origin in propaganda spread by the kings of Meroe in order to keep the secret of iron-working to their own craftsmen as long as possible. This may also account for the comparative rarity of iron objects in the graves of the common people in later Meroitic and X-group times, when they are frequent in royal graves.

Anyone who wishes to obtain a copy of this important paper is reminded that the number of *Sudan Notes and Records* in which it appears may be obtained for 30 PT. (6/–) from the Sudan Government London Office, Wellington House, Buckingham Gate, S.W. 1, or from the Hon. Treasurer, *Sudan Notes and Records*, Khartoum. A. J. ARKELL.

Reviews

BROOKLYN MUSEUM *JOURNAL*, 1943–1944. *New York, Brooklyn Institute of Arts and Sciences*, 1944. *pp.* 52 *and* 21 *plates in half-tone* (pp. 7–23 by Riefstahl with 6 plates, pp. 27–52 by Zimmern with 15 plates).

Elizabeth Riefstahl has set an example by writing up a piece of research in a form comprehensible and attractive to any intelligent reader with notes which supply the documentation and detail that scholars require. Her article, ' Doll, Queen or Goddess ', assembles and discusses a class of bronze statuettes, all examples of which come from Egypt, and are Egyptian in style, but have semi-negro physical features and wear jewellery that is not characteristically Egyptian. One element in the jewellery is the ram's head, symbol of Amon, the patron deity of the Ethiopians, and Miss Riefstahl confirms the theory that all the statuettes should be dated after the Ethiopian conquest of Egypt with the 25th dynasty. Her main topic is their religious or social significance. They are nude female figures, with the secondary sexual characteristics rather emphasized The arms were movable, and are usually missing but when preserved are straight and empty-handed. A crown upon the head appears in certain instances to have comprised a ring attachment by which the statuette could be suspended. The fact suggests dedication in a temple or in a domestic shrine ; but the workmanship is generally good, and if indeed these were votive offerings, they must have been given by persons of high rank. The type is distinctly reminiscent of the so-called Astarte figurines of Western Asia, but it does not appear to represent the Syrian ' Nude Goddess ' whose cult had long been naturalized in Egypt. The features vary as though there were an element of portraiture in them.

The subject might be a Divine Courtesan or one of her human impersonators ; yet the silence of the texts and explicit denials by the older Greek authors make it improbable that ritual prostitution can have flourished among the ruling class in Egypt. (Perhaps this argument has been given too much weight, for it need not apply to Ethiopians). There is no reason to suppose that concubines of a god or of the king were portrayed in such guise, though that would be a possible solution since the crown in some cases incorporates the royal uraeus.

There remains one other explanation—which is, it may be added, the same as is adduced for the majority of archaic Greek statues, the earliest of which cannot be appreciably later than the end of the Ethiopian dynasty. That is, the figures may be the dedications of worshippers who had themselves represented in the semblance of the deity. The goddess in question must have been concerned with love or fertility, and, while presumably of Asiatic origin, was no doubt in process of identification with Hathor or some other Egyptian goddess. The royal, or at any rate rich, votaries of the bronzes had probably the same object in mind as the poorer women who dedicated crude clay figurines, to win for themselves fertility, and, I would add, a husband's favour. Not that there is much ground for distinguishing between these two amenities of ancient Egyptian life, but it ought to be remarked that the bronzes convey no suggestion of maternity. That, of course, applies likewise to Greek terracotta ' dolls ' with movable arms ; but Miss Riefstahl is perhaps justified in ignoring the parallel. She proposes no explanation for the mobility of the arms, which in Greece is dubiously interpreted as apotropaic, though no objects of that nature have been found in the hands.

A. W. LAWRENCE.

THE EXCAVATIONS AT DURA-EUROPOS : Final Report IV, Part I, Fascicule I. The Green Glazed Pottery. *By* NICHOLAS TOLL. *New Haven, Yale University Press, and London, Humphrey Milford*, 1943. *pp.* 95, 20 *plates in collotype*, 31 *figures in line.* 13*s* 6*d.*

This is the first instalment of the final report upon the excavations at Dura and it makes an auspicious opening, for it is an ambitious and thorough work of pioneer research, finely produced and illustrated. It relates the Dura finds with those from Seleucia on Tigris and with imperfectly documented material from other sites, chiefly in Mesopotamia. The conclusions, while necessarily tentative in many respects, are likely to remain broadly acceptable.

The pottery is of a class the use of which spread with the expansion of the Parthian Empire. It is of Mesopotamian origin, a continuation of the glazed ware common in Iraq and Khuzistan under the Achaemenids, and was itself the precursor of the Sassanian wares from which the Islamic styles are descended. At the Parthian period development proceeded in three main regions which are entitled northern, western and southern Mesopotamia ; the finds come largely from Asshur in the north, Seleucia in the west (*sic*), Susa, Nippur and Uruk in the south. There was much local variation within each region, but the only minor area of production which can yet be recognized as distinctive comprises Dura and the rest of the Middle Euphrates towns. Here the typological sequence has been sketched out and its dating roughly ascertained. The green-glazed pottery became prevalent at Dura in the first century B.C. and remained so till the destruction of the city in 256. Greek influence in shapes or decoration is surprisingly slight. Acquaintance with the Hellenistic glazed ware of Asia Minor is shown only in moulded decoration ; such imitation has not been found outside the region described as western Mesopotamia. The fabric and most of the shapes alike are oriental, in clear line of descent from the New Babylonian Empire. A. W. LAWRENCE.

BERYTUS : Archaeological Studies *published by the Museum of Archaeology of the American University of Beirut.* Volume VIII, Fasc. I, 1943. *pp.* 72, 8 *plates in collotype*, 2 *figures in half-tone.*

T. J. Meek contributes a useful article cataloguing the ancient oriental seals in the Royal Ontario Museum. The collection, though small, is fairly representative and contains a few pieces of considerable artistic merit. The plates illustrate an impression of every seal at its actual size—in what material is not stated—in addition to photographs of some after enlargement by a new process. This consists of taking an impression in plasticine and making therefrom a mould in liquid latex rubber, which, when set, is immersed in ' kerosene ' till it swells to about twice the original size. The plaster casts from such moulds are said to bring out details in a manner that no enlarged photograph can rival. Chemists tell me that the rubber is likely to expand evenly and thus would in fact reveal small detail without distortion ; on the other hand, any roughness in the surface of the plasticine, rubber or plaster would interfere with the design. It is regrettable that readers are offered no chance of testing the value of the method by comparison with enlarged photographs.

One of the finest seals (no. 43), showing a naked archer and a stag, is ascribed to the Achaemenid period because of alleged Greek influence in the figure. The assumption would in any event appear unjustified, and a note by the editor, Harald Ingholt, compares the seal with some datable impressions from Asshur, published in the *Zeitschrift für Assyriologie* for 1940, and attributes it to the 13th century B.C. The figure has the torso

frontal but is otherwise in profile, the waist is very narrow, the surface markings are emphatically rendered. The style, which derives from that of the third millennium, has much resemblance to the Minoan of the immediately preceding centuries, as seen especially in the carvings on stone vases. When the German article becomes available it should be scrutinized in the hope of establishing definitely the source of the Minoan representation of the human figure, which cannot be derived from Egypt and is not likely to have originated in Crete itself.

Rostovtzeff's long article, ' Res Gestae Divi Saporis and Dura ', studies that part of the inscription of Shapuhr recently discovered (near Persepolis) which treats of his campaigns across North Syria. An elaborate attempt at a synoptic narrative combines the accounts of the inscription and of the historians with scraps of archaeological evidence. New interpretations result of two paintings at Dura ; one shows a Sassanian king defeating the Roman army, the other a Roman officer and a Palmyrene making thank-offerings for a victory of their own, to a Palmyrene god.

Bellinger follows with a re-examination of the numismatic evidence relating to the same war, with conjectures as to the mints and dating of the latest coins used by the Romans at Dura. H. C. Richardson ends an interesting fascicule with a note on the battle axe from Ras Shamra, metallurgically considered ; he thinks it is of meteoric iron and worthless as a weapon, but demands a thorough examination to determine the facts.

A. W. LAWRENCE.

THE HORSE IN GREEK ART. *By* SIDNEY DAVID MARKMAN. (*Johns Hopkins University Studies in Archaeology, no.* 35). *Baltimore, Johns Hopkins Press, and London, Humphrey Milford,* 1943. *pp.* 211 *and* 62 *figures in half-tone.* 30*s.*

Professor Markman's objective is to establish criteria for dating Greek works of art by the manner in which the horses are represented. He concerns himself primarily with sculpture, and his researches have in fact enabled him to propose new datings in this art, or datings within narrower limits than before. In at least one instance, that of a relief of a horseman in New York, the reviewer was immediately converted, because the style of its human figure agrees better with the period to which the horse would assign it than with that previously accepted. The method being thus justified by works, I am inclined to accord it some degree of faith.

Certainly the artistic development in representation of horses is convincingly stated, with full anatomical analyses, and the chronological sequence must in general be accepted. An individual monument might however be a little out of sequence, if artists differed in the degree of attention they gave to their horse figures. Until the European museums re-open and permit the data to be checked, close dating by the style of horses must remain suspect, and at the best the criteria must be applied with discretion and not used individually but in conjunction. For example, it is pointed out that in the 2nd century B.C.—the latest period considered—knowledge of equine anatomy had not kept pace with human, with the result that the horse figures tend to be extremely inaccurate because their contorted poses demand greater knowledge than before ; they conform to the spirit of the age in being dramatically rendered as subjected to physical and emotional strain.

It was, of course, already realized that Greek representation of animals followed the same line of development as the human figures, but the closeness of the parallel had not been demonstrated. It is an interesting sidelight on the repetitive element in the Parthenon that all the horses on the frieze are identical except one, which is a filly. And it is particularly useful to be able to trace the advance in equine anatomy through the archaic period of sculpture. With this should be compared Miss Richter's recent exposition

of the gradual improvement in the anatomy of the male human figure. Prof. Markman would be doing a service if he investigated the matter of whether the archaic sculptor at each stage of development had a similar vision of the surface marking in the man and in the horse. A. W. LAWRENCE.

EARLY BRITAIN. *By* JACQUETTA HAWKES. *William Collins, London*, 1945. 4*s* 6*d*.

This is a popular introduction to prehistoric Britain written by one who has earned the right to do so by hard work and original research. It is therefore up-to-date and authoritative, and we confidently recommend it. Jacquetta Hawkes has a vivid imagination, and consequently an interesting style. She sees the people she describes going about their daily tasks and has the power of making us see them too. (The first paragraph on p. 34, about the lake-village of Glastonbury, is a good example). But her imagination is firmly anchored to the facts established by the discoveries of other archaeologists, which form the background. Behind each statement the specialist can see the particular research which authorizes it; it would be an amusing game to take a few paragraphs and give the references. It is interesting also to speculate on the formative influences that have shaped the writer's outlook. Clues are provided by the excellent 'short bibliography' which rightly puts first Professor Gordon Childe's two classics. Coon's *Races* should we think be added to the list. Would it be expecting too much of readers to give them also the titles of a few outstanding but intelligible articles by specialists—for example, Stuart Piggott's on Wessex? There is so much good work buried in periodicals, and a glimpse of the machinery may help the understanding even of the uninitiated.

The illustrations are unconventional but will probably serve their purpose of attracting and interesting readers. Several of them are from old drawings and paintings, some of which (e.g. those of Pentre Ifan and Strathe) exaggerate the size of the monument. But they are preferable to the water-colour of the lovely Hambledon. The ideal illustration for a book of this kind is, in our opinion, the photograph of the Aylesford mask on p. 35. (When will similar photographs of the details of the Marlborough bucket be available?) The illustration of the Castor urn on p. 44 might have been as good if a better example had been selected, and if the illustration had been more successfully reproduced. For the illustrations on pp. 36 and 37 we should have selected the inscriptions mentioned at the top of the page and of the Roman catapult-arrow stuck in the back of a Briton. Both these have a dramatic element that always appeals to the non-specialist public.

But no selection of illustrations will ever be wholly satisfactory except that which one makes oneself! And we conclude by repeating that this is an admirable book.
O.G.S.C.

EARLY STOCKADED SETTLEMENTS IN THE GOVERNADOR, NEW MEXICO. *By* E. T. HALL, Jr. Columbia Studies in Archaeology and Ethnology, vol. II, Part 1. *Columbia University Press*, 1944. *pp.* 96, 37 *figs.*, 7 *appendices*, *bibliography*. 2 *dollars*.

This paper adds a piece to the jig-saw puzzle which the archaeology of the South-West still is. The Governador is a stretch of country, potentially fertile but rather dry, in the extreme north of New Mexico, and the Rosa phase of culture, with which the paper deals, is ascribed to Pueblo I, which is roughly contemporary with Basket-Maker III.

There is ample evidence from tree-ring counts for dating the remains from A.D. 700 to 900

Evidence from various sites shows that the people lived in circular houses, sunk to a depth of about 2 metres in the ground, with the roof supported by posts, and a fire pit in the centre. In removing the earth, the builders left a solid bench round about three quarters of the circumference, and this may have bins for storing food at the ends. The house was ventilated by means of an external shaft connected to a tunnel opening into the east side of the circle, where the bench is absent, and this eastern segment may, in later examples, be separated from the rest by a partition running between the bench-ends. This has a central opening, partly blocked by a deflector, which seems to be designed to keep the direct draught from the fire. Near the houses are granaries consisting of adobe rooms, with wooden floor and roof, both plastered over. The whole assemblage of house, granary, and in some cases external fire-pits, is typically surrounded by a stockade of posts at intervals of 10 to 25 cm., which were probably interlaced with brushwood. Vegetable foods of which there is evidence include maize, kidney beans and pinyon nuts, and the bones suggest that dogs and turkeys were the main animal foods. Pottery was made by coiling and appears always to have been started in coiled baskets, about which a good deal has been learnt from impressions surviving on the pots. The painted types-Rosa Black on White, and, what is believed to be a development of it, Transitional Decorated—are considered to be ancestral to those already described from the Largo Phase of the Gallina area some 50 miles to the South, which began some 150 years after the end of the Rosa.

The Rosa Phase is considered to be a marginal development of the Anasazi culture, which is one of the three main cultures of the South-West, and it is suggested that the majority of the non-Anasazi traits indicate contacts with the Plains Indians to the East. The importance of marginal developments, such as this, in unravelling the history of wide areas is properly stressed.

The paper is well printed and produced, but some of the plans, especially fig. 2, have been reduced more than the draughtsman intended, so that the legend in particular has lost in clarity. The frontispiece, a general view of the area, has been printed too dark.

G. H. S. BUSHNELL.

SAMARIA-SEBASTE. Reports of the work of the Joint Expedition in 1931–1935 and of the British Expedition in 1935. No. 1. The buildings at Samaria. *By* J. W. CROWFOOT, KATHLEEN M. KENYON, E. L. SUKENIK. *Palestine Exploration Fund.* 89 *plates*, 10 *maps*, 55 *text-figures*. 1942.

As long ago as 1908 Dr Reisner, on behalf of Harvard University, began the excavation of Sebastiya, the present name of the hill which Omri bought in the ninth century before Christ for two talents of silver in order to build there his capital, Samaria. From 1931 to 1933 a fresh expedition, supported jointly by British and American subscribers, was at work; and in 1935 the same party carried a final campaign, but under British auspices alone. It has been a slow task. Sebastiya is under cultivation and so could only be dug by strips, each of which had then to be filled up again with earth from the next strip to be dug, before it was returned to its owner. In this way it has proved possible to explore only a fraction of the ancient site. Yet even so it has yielded results of very great interest, especially to students of Biblical archaeology. The Israelite period is represented by a series of beautifully built walls, a large collection of ivories, and some fragments of inscriptions. The last, as the authors remark, although they are disappointing in content, are evidence of what the site once possessed and may perhaps still conceal.

Among these fragments the ' find ' most stimulating to thought must surely be a small piece of an Assyrian cuneiform inscription of Sargon, who destroyed the Kingdom of Israel. Whatever its contents may prove to be when published, its very presence serves as a kind of epitaph on the House of Omri, and provides a powerful illustration to the Book of Kings. As this volume is concerned only with the architectural remains, we must wait for the publication of these fragments in a future volume.

Structural remains of Ahab's Ivory Palace, mentioned in the Book of Kings, are all but wanting. But then Samaria was destroyed and rebuilt many times in antiquity. The surviving parts of the palace include some walling, built in headers and stretchers, which is rightly described as a masterpiece of the builder's art, and the most impressive monument of the Israelite Age in Palestine. Its place in history is stressed by the authors. It belongs, they remind us, to the same complex of artistic influences which we meet in the Hebrew-Phoenician script, the ivories mentioned above, and the earlier sections of the Pentateuch. This style of building, it may be guessed, was probably that used also in the Temple of Solomon at Jerusalem, for it is clearly shown by the authors to have been introduced into Samaria by Omri and Ahab from Phoenicia. Such bonding was not used by the Egyptians. The Phoenician-Samarian style must be regarded as the parent of all regularly bonded stonework in the subsequent history of architecture. Together with this walling was associated the find of some fresh examples of ' Proto-Ionic ' capitals. There is thus here plenty of material for students of the origins of Greek architecture.

This work brings several corrections to our knowledge : the building in which Reisner found the *ostraca* bearing Hebrew taxation records, is now dated not to Omri, but to Jeroboam II : while the magnificent Round Tower, ascribed to Jeroboam II by Reisner, is now brought down to the Hellenistic period. The ' Greco-Babylonian ' fort is Hellenistic, and was used as the Keep when the city was besieged by the Maccabeans from 111 to 107 B.C. Further, Josephus alleges that the victors destroyed the city walls. Excavation proves this to have been an exaggeration, for they were merely breached.

Herod rebuilt the city, renamed it Sebaste after Augustus, and settled it with Thracian and German veterans from the Roman legions. The native Samaritans, descended partly from the Israelite inhabitants, and partly from the Babylonian settlers imported by Sargon, must have been kept at a distance. Still ardent monotheists today, they can have had little liking for the magnificent temple which Herod raised to Rome and Augustus. The Samaritans still survive, but the excavators could find but very little of the Temple. What remains of the massive substructures which were built to extend its base afford useful comparisons with the equally sorry remains of Herod's other great temple, that at Jerusalem, which was supported on the construction known today by the fanciful name of the Stables of Solomon.

Other discoveries include the temple of Kore and what is said to be an Israelite shrine. Interesting smaller matters are vats for dyeing cloth (p. 115), a Roman stepped bath (p. 134), a colonnaded street of shops like a modern oriental *souk*, and a Stadium with some graffiti on the walls. One of these scribblings shows a turbaned native driving a camel. This although crude, is the only illustration known to the reviewer showing how the ordinary native of Palestine then dressed. Extremely useful, too, is the recovery of the plan of the Roman aqueduct. This work led to an unexpected discovery : one of the sources of the water supply, that at Khirbet Miamus, ran through a strange chapel cut inside the rock. The similarity of the names suggests that it may have been dedicated in late times to the mysterious cult of Maiumas.

The plates are excellent (Correct, however *insular* to *insula* of the pls. 73 to 78.) It is hoped that a final volume will include indices. R. D. BARNETT.

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